5esA

PRODUCT CATALOGUE

www.bes-a.com

Beş A

Established in 1995, Beş A is one of the leading industrial enterprises that designs and manufactures innovative products in the lighting electronics sector in Turkey. Beş A started production with electronic ballasts and in 1999 it extended its product range with emergency lighting units, emergency exit luminaries and emergency lighting luminaries by taking into consideration the needs of Turkish market.

As an innovative move, Beş A started to use LED lighting technology in its designs in 2004. In 2013 Beş A started developing and manufacturing emergency lighting units, highly efficient LED drivers and aluminum LED panel luminaries to be utilized in SMD LED lighting systems. Consequently, Beş A became the most reliable partner of its customers in LED lighting.

Beş A has undertaken and concluded many innovative projects with its 20 years of knowhow and experience. Beş A meets the demand from the sector with its wide product range consisting of approximately 500 products in about 50 product groups. Today, our company continues its operations in its indoor facility of 2,500 m^2 with its 50 staff who are experts in their respective areas. By producing pioneering and creative works, our company, which manufactures fast, efficiently and in high capacity, adopted customer-oriented service as its strategic target.

Always aiming to manufacture new technologies, Beş A produces its mechanic and electronic designs in its TUV Rheinland certificated R&D laboratory. Beş A, giving utmost importance to the cooperation of public, industry and university in product design and development, became a participant of the "EVATEG" project which led to the establishment of the Energy Efficient LED Lighting Technologies Research, Development, Training and Implementation Laboratory. It developed the first "Emergency Lighting Unit with Microprocessor for 220 V Operated LED Lamps" R&D project in Turkey with the support of TUBITAK. Our company, which derives a great deal of its strength from the "sustainable development principle" and from its employees that adhere to this principle strictly, successfully carries out many similar projects focusing on technological development.

The product quality of our company was approved by international institutions such as TSE, TUV Rheinland and BSI. Beş A also made its quality management systems compatible with ISO 9001 standards. In the light of all these successes, Beş A has the vision of "being among the pioneering companies that represent our country abroad in the year 2020".

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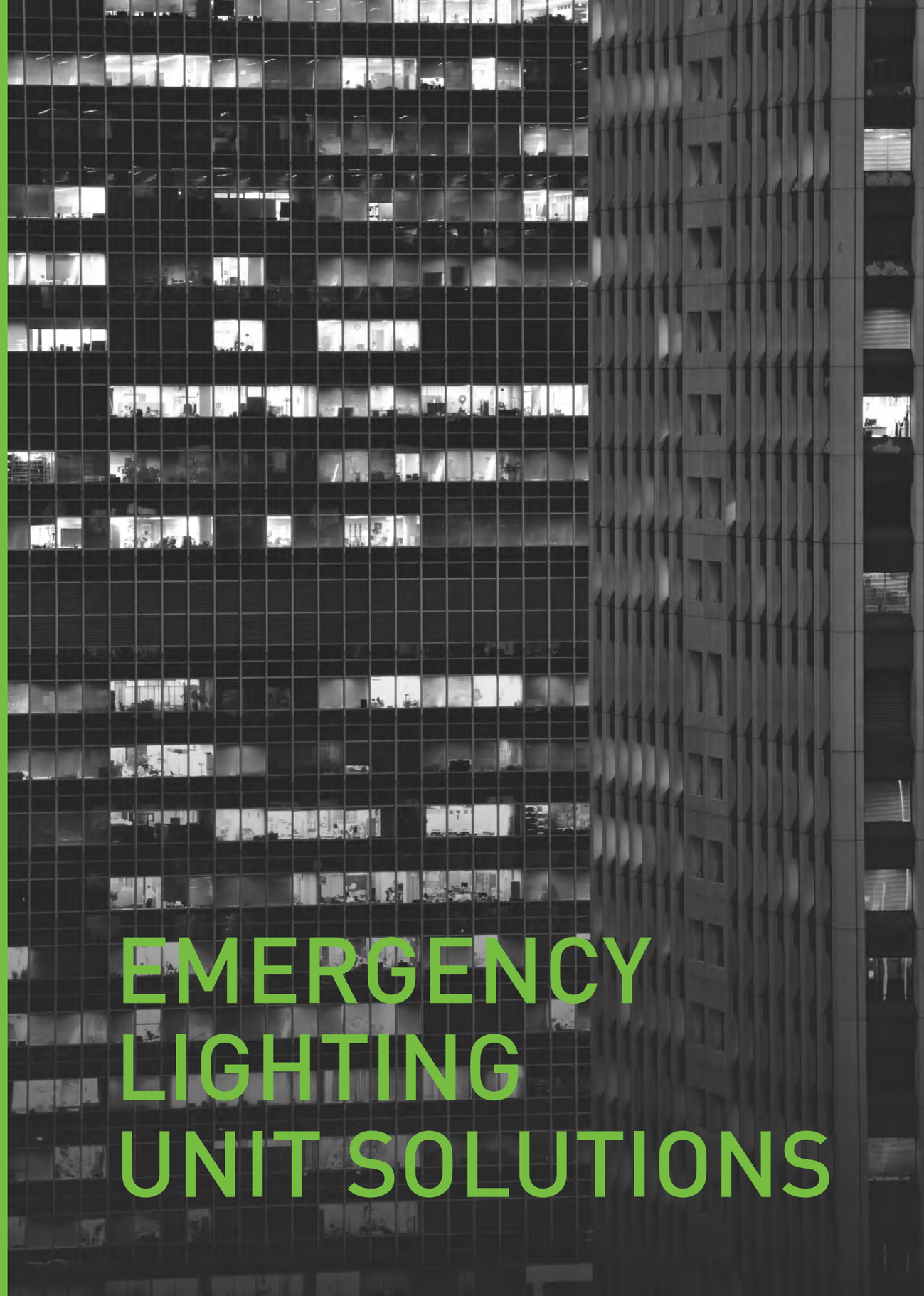


EMERGENCY LIGHTING UNIT SOLUTIONS

EMERGENCY LIGHTING UNIT SOLUTIONS

OVERVIEW

EMERGENCY LIGHTING UNITS

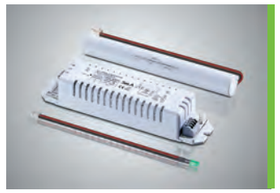
An emergency lighting unit is an electronic circuit that provides adequate lighting to the surroundings in the case of a power failure, by the help of the battery it has, provided that it is connected to light sources such as LED, fluorescent and halogen used for general lighting. An emergency lighting unit must be fed from a non-switched phase. It tracks power outage from its own feed ends. In the case of a power failure, it prevents panic and provides the necessary lighting for the fastest evacuation possible from the surroundings.

Beş A provides up to standard solutions for all types of light sources in the domain of battery operated emergency lighting units.

EMERGENCY LIGHTING UNITS

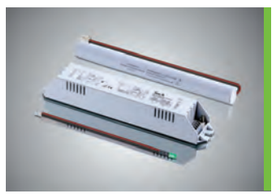
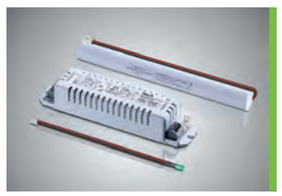
Emergency Lighting Unit - LED

An Emergency Lighting Unit - LED is an electronic circuit that prompts LED lamps to illuminate the surroundings in the case of an emergency. The usage of LED based lighting systems increase rapidly day by day. In this segment Beş A provides tailored solutions for its customers with its products LED fluorescent, LED downlight, LED spot, LED panels and LED sticks.



Emergency Lighting Unit - Fluorescent Lamp

An Emergency Lighting Unit - Fluorescent Lamp is an electronic circuit that prompts fluorescent lamps to illumiante the surroundings in the case of an emergency. Beş A offers emergency lighting unit solutions complying with all power levels for 4-pin T8, T5, PLL and PLC fluorescent lamps.

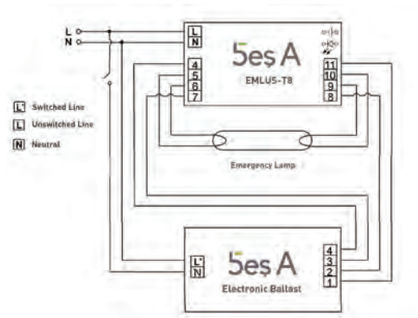
Emergency Lighting Unit - Halogen Lamp

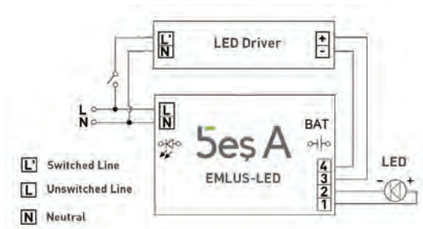
Emergency Lighting Unit - Halogen Lamp is an electronic circuit that prompts 12 V halogen lamps to illuminate the surroundings in the case of an emergency.

EMERGENCY LIGHTING UNIT MODELS

Non - Maintained Model (EMLUS)

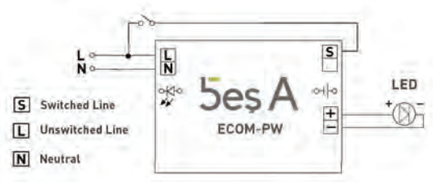
EMLUS switches on the light source (LED, fluorescent, halogen) connected to its outlets through the connection of an external driver such as a LED driver or a ballast when the power is on and in the case of an emergency.





Integrated Model (ECOM)

ECOM is the combination of the emergency lighting unit and the driver (the LED driver and the ballast). It does not require an external ballast or a LED driver. It switches on the light source by the internal driver it possesses (LED driver, ballast, transformer) when the power is on and in the case of an emergency.



THE EMERGENCY LUMEN FACTOR (BLF, EBLF)

The emergency lumen factor or the emergency ballast lumen factor is the ratio of the light level transferred to the light sources such as LED, fluorescent and halogen by the emergency lighting unit in the case of an emergency to the light level of the light source under normal operation. It is stated as a percentage (%) in catalogues.

When emergency lighting units produced for LED, fluorescent or certain low voltage halogen lamps become active, they switch on the lamp not with its normal illumination capacity but with the emergency illumination level, which is lower. Since the purpose is to provide lighting at the illumination level set by the standards that allows the evacuation of the building, the lamp must not be switched on at full power. When designing with emergency lighting units in the emergency lighting system, if the emergency lumen factor is high, then this has an effect to reduce the number of compulsory devices to be used.

STANDALONE EMERGENCY LIGHTING LUMINARY

A standalone emergency lighting luminary is a lighting luminary with own battery, charge circuit, power voltage controller and lamp driver circuit. It can be obtained by installing an emergency lighting unit in a regular lighting luminary.

This method is obligatory in first and second-degree earthquake zones.

The light source can be a fluorescent, LED, compact fluorescent or low voltage tungsten halogen lamp. In the systems where standalone lighting luminaries are used, the installation is quick, the cable installation cost is low and increasing the capacity is easy. They are compatible with architectural variations.

LOCATIONS WHERE THE USE OF AN EMERGENCY LIGHTING SYSTEM IS COMPULSORY

Emergency lighting is obligatory in following locations

- All escape and exit routes
- Gathering points
- Elevators and escalators
- Workshops and laboratories where machinery in motion and chemicals that pose high risk are located
- Electricity distribution and generator rooms
- Central battery unit rooms
- Indoors car parks
- Gas stations
- Areas where fire alarm buttons and fire cabinets are located

Emergency lighting is obligatory in following buildings

- Hospitals and nursing homes
- Schools and other buildings for education
- All buildings with a occupant load of 200 or more
- Buildings with 50 or more occupants under the ground level
- Buildings without windows
- Hotels and dormitories
- Tall buildings
- Central battery unit rooms

BATTERY USER'S MANUAL

• Emergency lighting units must be operated on a non-switched phase with the voltage stated on them. Power must not be interrupted except for maintenance and testing purposes. Continuously turning off and on the line which the device is connected wears the fluorescent lamps and battery.

• Emergency lighting units must not be operated in environments where the temperature is not within the operating environment temperature threshold stated on the unit for long periods. If they are, this may cause damage in the device and the battery.

• Emergency lighting units must be operated in environments that comply with the IP Protection Class conditions that are stated on the units. Operating the device in environments other than those stated may cause damage in the device and the battery.

• The initial charging time of the battery is 48 hours for 1-hour capacity products and 96 hours for 3-hour capacity products. For the next charges, 24 hours for 1-hour capacity products and 48 hours for 3-hour capacity products are enough for the battery to be fully charged.

• When installing emergency lighting units, the battery must be connected to the emergency unit circuit when the luminary is to be used. In cases where it takes time for the luminary to be operative after the installation, the battery must be removed from its socket after the necessary controls.

• The emergency lighting units and emergency exit luminaries should not be stored inactive for too long since their batteries are already mounted. Batteries that remain inactive in the socket for long periods before the actual energy supply may irreversibly be damaged.

• A previously charged battery loses 15% of its capacity per month when it is not used. Thus, previously charged batteries must not remain inactive for more than 3 months. Uncharged batteries can remain inactive for 2 years in favorable storage conditions. It is not suggested to store the batteries under temperatures higher than 40°C.

• Batteries that remained inactive for a long time may require around two to ten charging cycles to reach full capacity.

• In emergency lighting unit installations, the permanent line must be disconnected once in every six months and the battery capacities must be tested. Before this test is conducted, it must be checked that there were no interruptions in the line for 24 hours for 1-hour capacity products and 48 hours for 3-hour capacity products and that the battery is sufficiently charged. Once this is checked, the power to the device must be cut and the "Emergency Lighting Duration" of the lamps must be controlled. It must be confirmed by the operator conducting the test that the lamps provide light for at least 30 minutes for 1-hour capacity models and at least 2 hours for 3-hour capacity models. The operator must inform the authorities that the batteries of the luminaries that cannot deliver the required performance have completed their life cycles.

• When the battery is to be changed, first the power to the device must be cut and then the old battery must be replaced with an equivalent battery. When replacing the battery, the use of lower than required capacity batteries may cause the device not to operate whereas the use of higher than required capacity batteries may cause the device to break down.

• Out of use batteries must not be thrown away with regular waste. They must be sent to waste collection centers or to the manufacturer in order to be sent to these centers.

BATTERY DETAILS TABLE
(ALL PRODUCTS)

TECHNOLOGY OF THE BATTERY	BATTERY DESIGNATION	CAPACITY	VOLTAGE	MAXIMUM CHARGE CURRENT	MINIMUM CHARGE CURRENT	CHARGE VOLTAGE LIMIT	MAXIMUM DISCHARGE CURRENT	MINIMUM DISCHARGE CURRENT	DISCHARGE VOLTAGE LIMIT	TEMPERATURE RATING	USAGE INFORMATION
Ni-Cd	D, KRMT 33/60	6000mAh	1.2 V/cell battery	300mA permanent charge	240mA permanent charge	Up to 1.55 V per cell	4200mA - for 1 h discharge	1500mA - for 3 h discharge	1V per cell	Recommended 0 - 50 °C	Discharge every 6 months. Discharge 1500mA for 10 to 20 minutes.
Ni-Cd	D, KRMT 33/60	5000mAh	1.2 V/cell battery	250mA permanent charge	200mA permanent charge	Up to 1.55 V per cell	3500mA - for 1 h discharge	1250mA - for 3 h discharge	1V per cell	Recommended 0 - 50 °C	Discharge every 6 months. Discharge 1250mA for 10 to 20 minutes.
Ni-Cd	D, KRMT 33/60	4000mAh	1.2 V/cell battery	200mA permanent charge	160mA permanent charge	Up to 1.55 V per cell	2800mA - for 1 h discharge	1000mA - for 3 h discharge	1V per cell	Recommended 0 - 50 °C	Discharge every 6 months. Discharge 1000mA for 10 to 20 minutes.
Ni-Mh	SC, HRMT 23/43	3500mAh	1.2 V/cell battery	175mA permanent charge	140mA permanent charge	Up to 1.55 V per cell	2450mA - for 1 h discharge	850mA - for 3 h discharge	1V per cell	Recommended 0 - 50 °C	Discharge every 6 months. Discharge 850mA for 10 to 20 minutes.
Ni-Cd	C, KRMT 26/50	3000mAh	1.2 V/cell battery	150mA permanent charge	120mA permanent charge	Up to 1.55 V per cell	2100mA - for 1 h discharge	750mA - for 3 h discharge	1V per cell	Recommended 0 - 50 °C	Discharge every 6 months. Discharge 750mA for 10 to 20 minutes.
Ni-Cd	SC, KRMT 23/43	2200mAh	1.2 V/cell battery	110mA permanent charge	90mA permanent charge	Up to 1.55 V per cell	1550mA - for 1 h discharge	550mA - for 3 h discharge	1V per cell	Recommended 0 - 50 °C	Discharge every 6 months. Discharge 550mA for 10 to 20 minutes.
Ni-Cd	SC, KRMT 23/43	1800mAh	1.2 V/cell battery	90mA permanent charge	70mA permanent charge	Up to 1.55 V per cell	1250mA - for 1 h discharge	450mA - for 3 h discharge	1V per cell	Recommended 0 - 50 °C	Discharge every 6 months. Discharge 450mA for 10 to 20 minutes.
Ni-Cd	SC, KRMT 23/43	1600mAh	1.2 V/cell battery	80mA permanent charge	65mA permanent charge	Up to 1.55 V per cell	1150mA - for 1 h discharge	400mA - for 3 h discharge	1V per cell	Recommended 0 - 50 °C	Discharge every 6 months. Discharge 400mA for 10 to 20 minutes.
Ni-Cd	AA, KRMT 15/49	1000mAh	1.2 V/cell battery	50mA permanent charge	40mA permanent charge	Up to 1.55 V per cell	700mA - for 1 h discharge	250mA - for 3 h discharge	1V per cell	Recommended 0 - 50 °C	Discharge every 6 months. Discharge 250mA for 10 to 20 minutes.
Ni-Cd	AA, KRMT 15/49	900mAh	1.2 V/cell battery	45mA permanent charge	35mA permanent charge	Up to 1.55 V per cell	650mA - for 1 h discharge	220mA - for 3 h discharge	1V per cell	Recommended 0 - 50 °C	Discharge every 6 months. Discharge 220mA for 10 to 20 minutes.

EMERGENCY LIGHTING UNIT

PRODUCT SELECTION GUIDE

EMERGENCY LIGHTING UNIT SOLUTIONS
LED

EMLUS-LED

Compatible With

- LED Downlight
- COB LED
- LED Strip
- LED Stick
- Power LED
- LED Spot Lamp
- Panel LED

Emlus-LED is suitable for the luminary with external LED driver that has 1 - 150 VDC output voltage. It feeds the LEDs with 35-70 mA output current in the case of emergency.

EMLUS-XLED

Compatible With

- LED Downlight
- COB LED
- LED Strip
- LED Stick
- Power LED
- LED Spot Lamp
- Panel LED

Emlus-XLED is suitable forthe luminary with external LED driver that has 1 - 60 VDC output voltage. It feeds the LEDs with 150 mA / 300 mA output current in the case of emergency.

EMLUS-PW

Compatible With

- Power LED
- LED Stick
- LED Lamp

EMLUS-PW is designed for serial power LED applications between 1-9. It is suitable for 1 W and 3 W power LED applications. It provides 85% of the light it gives in operation on main power in the case of emergency.

EMLUS-12V

Compatible With

- LED Strip
- LED Stick
- LED Spot Lamp

EMLUS-12V is suitable for LED strip applications up to 12 V-50 W. It provides the same light as in operation on main power in the case of emergency.

EMLUS-24V

Compatible With

- LED Strip
- LED Stick
- LED Spot Lamp

EMLUS-24V is suitable for LED strip applications up to 24 V-100 W. It provides the same light as in operation on main power in the case of emergency.

EMLUS-220

Compatible With

- LED Spot Lamp
- LED Tube
- LED Lamp

EMLUS-220 is suitable for LED spot, LED tube, panel luminaries, that operates on 220 V main power. It is manufactured for the lamps and luminaries with up to 30 W output power.
It provides the same light as in operation on main power in the case of emergency.

EMLUS-220 (SPOT)

Compatible With

- LED Spot Lamp

EMLUS-220 (SPOT) is suitable for 3 W and 5 W LED spot lamps that operate on 220 V.
It provides the same light as in operation on main power in the case of emergency.

ECOM-PW

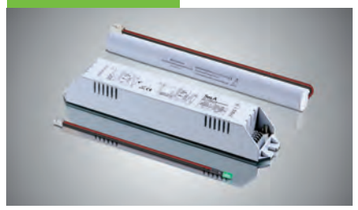
Compatible With

- Power LED spot
- Power LED
- LED Spot Lamp

ECOM-PW is designed for serial power LED applications between 1-7. It is suitable for 1 W, 2 W and 3 W power LED applications. It provides 85% of the light it gives in operation on main power in the case of emergency.

EMERGENCY LIGHTING UNIT SOLUTIONS
FLUORESCENT LAMP

EMLUS-T5



Compatible With

- T5 Circular Fluorescent Lamp
- T5 Fluorescent Lamp

EMLUS-T5 is suitable for 4-pin T5 fluorescent lamps.
It is compatible with electronic and mechanic ballasts.

EMLUS-PLL

Compatible With

- PLL Compact Fluorescen Lamp

EMLUS-PLL is suitable for 4-pin PLL fluorescent lamps.
It is compatible with electronic and mechanic ballasts.

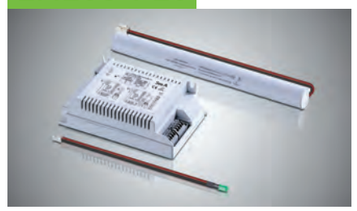
EMLUS-T8

Compatible With

- T8 Fluorescent Lamp

EMLUS-T8 is suitable for 4-pin T8 fluorescent lamps.
It is compatible with electronic and mechanic ballasts.

EMLUS-PLC



Compatible With

- PLC Compact Fluorescent Lamp

EMLUS-PLC is suitable for 4-pin PLC fluorescent lamps.
It is compatible with electronic and mechanic ballasts.

EMERGENCY LIGHTING UNIT
INTEGRATED
FLUORESCENT LAMP

ECOM-T5

Compatible With

- T5 Circular Fluorescent Lamp
- T5 Fluorescent Lamp

ECOM-T5 is designed for lighting 4-pin T5 fluorescent lamps on main power and in the case of emergency. It is the combination of Emergency Lighting Unit and Electronic Ballast. It lights one lamp connected to its ends on main power and in the case of emergency with its internal ballast.

ECOM2-T5

Compatible With

- T5 Circular Fluorescent Lamp
- T5 Fluorescent Lamp

ECOM2-T5 is designed for lighting 4-pin T5 fluorescent lamps on main power and in the case of emergency. It is the combination of Emergency Lighting Unit and Electronic Ballast. With its internal ballast, on main power it lights two lamps connected to its ends, and in the case of emergency it lights only one of these lamps.

ECOM-T8

Compatible With

- T8 Fluorescent Lamp

ECOM-T8 is designed for lighting 4-pin T8 fluorescent lamps on main power and in the case of emergency. It is the combination of Emergency Lighting Unit and Electronic Ballast. It lights one lamp connected to its ends on main power and in the case of emergency with its internal ballast.

ECOM2-T8

Compatible With

- T8 Fluorescent Lamp

ECOM2-T8 is designed for lighting 4-pin T8 fluorescent lamps on main power and in the case of emergency. It is the combination of Emergency Lighting Unit and Electronic Ballast. With its internal ballast, on main power it lights two lamps connected to its ends, and in the case of emergency it lights only one of these lamps.

ECOM-PLL

Compatible With

- PLL Compact Fluorescent Lamp

ECOM-PLL is designed for lighting 4-pin PLL fluorescent lamps on main power and in the case emergency. It is the combination of Emergency Lighting Unit and Electronic Ballast. It lights one lamp connected to its ends on main power and in the case of emergency with its internal ballast.

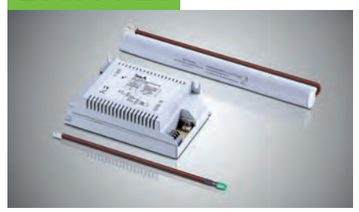
ECOM2-PLL

Compatible With

- PLL Compact Fluorescent Lamp

ECOM2-PLL is designed for lighting 4-pin PLL fluorescent lamps on main power and in the case of emergency. It is the combination of Emergency Lighting Unit and Electronic Ballast. With its internal ballast, on main power it lights two lamps connected to its ends, and in the case of emergency it lights only one of these lamps.

ECOM-PLC



Compatible With

- PLC Compact Fluorescent Lamp

ECOM-PLC is designed for lighting 4-pin PLC fluorescent lamps on main power and in the case of emergency. It is the combination of Emergency Lighting Unit and Electronic Ballast. It lights one lamp connected to its ends on main power and in the case of emergency with its internal ballast.

ECOM2-PLC

Compatible With

- PLC Compact Fluorescent Lamp

ECOM2-PLC is designed for lighting 4-pin PLC fluorescent lamps on main power and in the case of emergency. It is the combination of Emergency Lighting Unit and Electronic Ballast. With its internal ballast, on main power it lights two lamps connected to its ends, and in the case of emergency it lights only one of these lamps.

EMERGENCY LIGHTING UNIT SOLUTIONS
HALOGEN LAMP

EMLUS-HJ

Compatible With

- Spot Halogen Lamp
- G9 Halogen Lamp
- AR 111 Halogen Lamp

EMLUS-HJ is suitable for 20 W and 50 W power values that operate on 12 V.
It provides 30% of the light it gives in operation on main power in the case of emergency.

EMLUS-1250

Compatible With

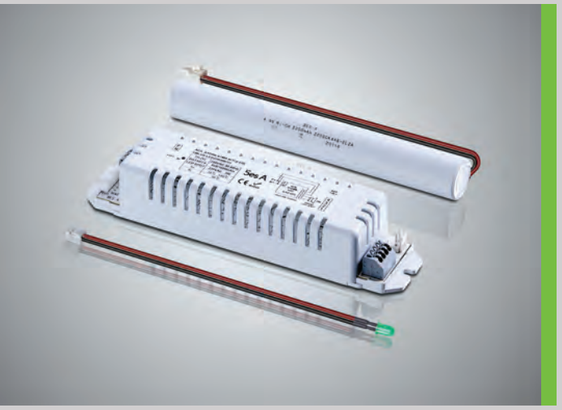
- Spot Halogen Lamp
- G9 Halogen Lamp
- AR 111 Halogen Lamp

EMLUS-1250 is suitable for 50 W power values that operate on 12 V. It provides the same light as in operation on main power in the case of emergency.

EMERGENCY LIGHTING UNITS

PRODUCTS

EMERGENCY LIGHTING UNIT - LED
(EMLUS-LED)



- Compatible with LED lighting and COB LED
- Compatible with all dimmable and non-dimmable, constant current LED control gears
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Emergency lighting function in case of low-voltage
- Constant current output
- Operation range of 1 - 150 V
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Optional - test switch
- Optional - application of 110 V operating voltage
- Non-flammable ABS case
- Simple connectable terminal block

SELV | 230 VAC 50/60 Hz | IP 20 | V0 ABS | CEM1 PCB | SMD | -|ıl|- Ni-Cd | EN 61347-2-7 | EN 61347-2-13

In accordance with EN 61347-1, EN 61347-2-7 and EN 60929.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	OUTPUT CURRENT :	35 ... 70 mA
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	OUTPUT VOLTAGE :	1-150 VDC
MAX. CASING TEMPERATURE (tc) :	70 °C	OPEN CIRCUIT VOLTAGE :	0 VDC
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II
EMERGENCY LUMEN FACTOR (BLF) :	5% - 20%		

PRODUCT LIST

PRODUCT CODE	OUTPUT CURRENT*	LED MODULE OUTPUT VOLTAGE RANGE	LED CURRENT TOLERANCE	LED QUANTITY	OUTPUT POWER*
EMLUS-LED/01-20V	70 mA	1 - 20 VDC	±5%	1 - 7 LED	1,2 W
EMLUS-LED/21-40V	65 mA	21 - 40 VDC	±5%	8 - 13 LED	2,2 W
EMLUS-LED/41-60V	60 mA	41 - 60 VDC	±5%	14 - 20 LED	3,4 W
EMLUS-LED/61-90V	40 mA	61- 90 VDC	±5%	21 - 30 LED	3,3 W
EMLUS-LED/91-150V	35 mA	91 - 150 VDC	±5%	31 - 50 LED	4,5 W

* Measured using maximum LED quantities with 4.8 V battery

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-LED/01-20V	4,8 V / 900 mAh (1 h) 4,8 V / 2200 mAh (3 h)	3,1	0,020	43x185x34	0,200	30
EMLUS-LED/21-40V	4,8 V / 1600 mAh (1 h) 4,8 V / 3000 mAh (3 h)	3,9	0,020	43x185x34	0,200	30
EMLUS-LED/41-60V	4,8 V / 1600 mAh (1 h) 4,8 V / 4000 mAh (3 h)	3,9	0,020	43x185x34	0,200	30
EMLUS-LED/61-90V	4,8 V / 1600 mAh (1 h) 4,8 V / 4000 mAh (3 h)	3,9	0,020	43x185x34	0,200	30
EMLUS-LED/91-150V	4,8 V / 2200 mAh (1 h) 4,8 V / 5000 mAh (3 h)	4,1	0,020	43x185x34	0,200	30

* Measured with 3-h circuits under 230 V mains.

EMERGENCY LUMEN FACTOR (BLF)

LED OPERATING VOLTAGE	LED OPERATING CURRENT 350mA	LED OPERATING CURRENT 500mA	LED OPERATING CURRENT 700mA	LED OPERATING CURRENT 1050mA	LED OPERATING CURRENT 1400mA
01-20 VDC	20,00%	14,00%	10,00%	6,67%	5,00%
21-40 VDC	18,57%	13,00%	9,29%	6,19%	4,64%
41-60 VDC	17,14%	12,00%	8,57%	5,71%	4,29%
61-90 VDC	11,43%	8,00%	5,71%	3,81%	2,86%
91-150 VDC	10,00%	7,00%	5,00%	3,33%	2,50%

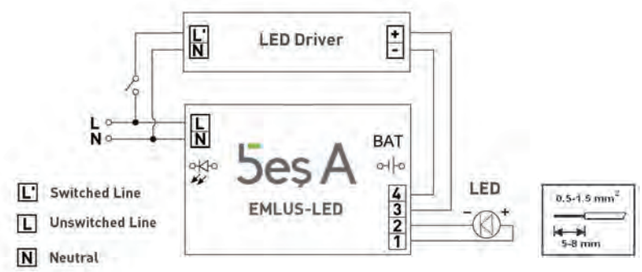
Measured with 4.8 V battery under maximum operating voltage

BATTERY DATA

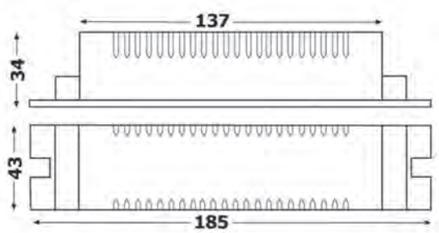
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
4,8 V	900 mAh	AA	14,5	4	14,5x192x14,5	0,112
4,8 V	1600 mAh	SC	23	4	23x180x23	0,200
4,8 V	2200 mAh	SC	23	4	23x180x23	0,240
4,8 V	3000 mAh	C	26	4	26x196x26	0,320
4,8 V	4000 mAh	D	35	4	35x248x35	0,520
4,8 V	5000 mAh	D	35	4	35x248x35	0,640

Please refer to “Battery Details Table” in “Emergency Lighting Unit Overview” section of the catalogue for further battery information.

WIRING DIAGRAM

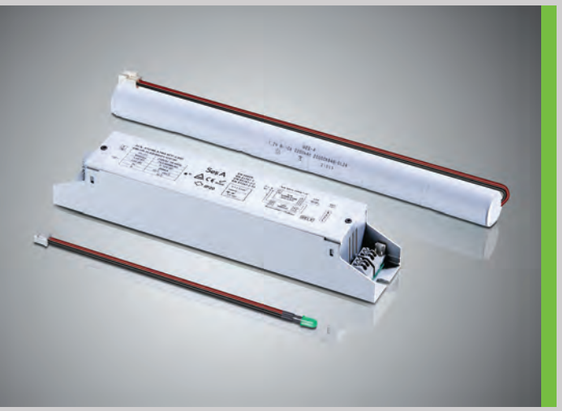


TECHNICAL DRAWING



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING UNIT - LED
(EMLUS-XLED)



- Compatible with LED lighting and COB LED
- Compatible with all dimmable and non-dimmable, constant current LED control gears
- Maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Emergency lighting function in case of low-voltage
- Constant current output
- Operation range of 1 - 150 V
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Optional - test switch
- Optional - application of 110 V operating voltage
- Anodized aluminum case
- Simple connectable terminal block

TÜVRheinland · IECEE · CE · RoHS · LED

SELV · 230 VAC 50/60 Hz · IP 20 · 41 ALU · V0 ABS · FR4 PCB · SMD · -|ıl|- Ni-Cd · EN 61347-2-7 · EN 61347-2-13

In accordance with EN 61347-1, EN 61347-2-7, and EN 60929.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	OUTPUT CURRENT :	100 ... 300 mA
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	OUTPUT VOLTAGE :	1 ... 60 VDC
MAX. CASING TEMPERATURE (tc) :	70 °C	OPEN CIRCUIT VOLTAGE :	5 VDC
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	I
EMERGENCY LUMEN FACTOR (BLF) :	10%- 85%		

PRODUCT LIST

PRODUCT CODE	OUTPUT CURRENT*	LED MODULE OUTPUT VOLTAGE RANGE	LED CURRENT TOLERANCE	LED QUANTITY	OUTPUT POWER*
EMLUS-XLED150/01-21V	150 mA	1 - 21 VDC	±5%	1 - 7 LED	3,02 W
EMLUS-XLED150/22-36V	150 mA	22 - 36 VDC	±5%	8 - 12 LED	5,10 W
EMLUS-XLED150/37-60V	150 - 100 mA	37 - 60 VDC	±5%	13 - 20 LED	5,68 W
EMLUS-XLED300/01-12V	300 mA	1 - 12 VDC	±5%	1 - 4 LED	2,70 W
EMLUS-XLED300/13-24V	300 mA	13 - 24 VDC	±5%	5 - 8 LED	5,70 W

* Measured using maximum LED quantities with 7.2 V battery

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-XLED150/01-21V	7,2 V / 900 mAh (1 h) 7,2 V / 2200 mAh (3 h)	3,5	0,020	39x216x38	0,272	30
EMLUS-XLED150/22-36V	7,2 V / 1600 mAh (1 h) 7,2 V / 4000 mAh (3 h)	3,5	0,020	39x216x38	0,272	30
EMLUS-XLED150/37-60V	7,2 V / 2200 mAh (1 h) 7,2 V / 5000 mAh (3 h)	3,5	0,020	39x216x38	0,272	30
EMLUS-XLED300/01-12V	7,2 V / 1600 mAh (1 h) 7,2V / 4000 mAh (3 h)	3,5	0,020	39x216x38	0,272	30
EMLUS-XLED300/13-24V	7,2 V / 2200 mAh (1 h) 7,2 V / 5000 mAh (3 h)	3,5	0,020	39x216x38	0,272	30

* Measured with 3-h circuits under 230 V mains.

EMERGENCY LUMEN FACTOR (BLF)

EMLUS-XLED150

LED OPERATING VOLTAGE	LED OPERATING CURRENT 350mA	LED OPERATING CURRENT 500mA (%)	LED OPERATING CURRENT 700mA	LED OPERATING CURRENT 1050mA	LED OPERATING CURRENT 1400mA
01-21 VDC	42,86%	30,00%	21,43%	14,29%	10,71%
22-36 VDC	42,86%	30,00%	21,43%	14,29%	10,71%
37-60 VDC	28,57%	20,00%	14,29%	9,52%	7,14%

EMLUS-XLED300

LED OPERATING VOLTAGE	LED OPERATING CURRENT 350mA	LED OPERATING CURRENT 500mA	LED OPERATING CURRENT 700mA	LED OPERATING CURRENT 1050mA	LED OPERATING CURRENT 1400mA
01-12 VDC	85,71%	60,00%	42,86%	28,57%	21,43%
13-24 VDC	85,71%	60,00%	42,86%	28,57%	21,43%

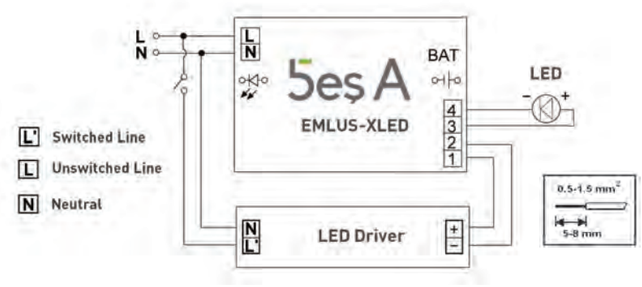
Measured with 7.2 V battery under maximum operating voltage.

BATTERY DATA

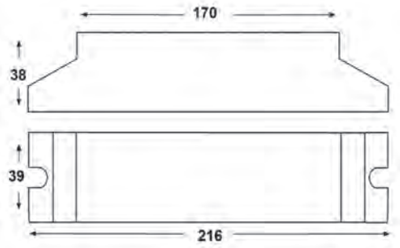
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
7,2 V	900 mAh	AA	14,5	6	14,5x288x14,5	0,168
7,2 V	1600 mAh	SC	23	6	23x270x23	0,250
7,2 V	2200 mAh	SC	23	6	23x288x23	0,300
7,2 V	4000 mAh	D	35	6	35x372x35	0,780
7,2 V	5000 mAh	D	35	6	35x372x35	0,960

Please refer to “Battery Details Table” in “Emergency Lighting Unit Overview” section of the catalogue for further battery information.

WIRING DIAGRAM



TECHNICAL DRAWING



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING UNIT - LED
(EMLUS-PW)

- Compatible with LED lighting and COB LED
- Compatible with all dimmable and non-dimmable, constant current LED control gears
- Maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 -2 and 4 h duration
- Emergency lighting function in case of low-voltage
- Constant current output
- Drive 1-9 (1 to 9) serially connected LED pieces
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Optional - test switch
- Optional - application of 110 V operating voltage
- Non-flammable ABS case
- Simple connectable terminal block

CE RoHS LED

SELV | 230 VAC 50/60 Hz | IP 20 | V0 ABS | CEM1 PCB | SMD | -|ıl|- Ni-Cd | EN 61347-2-7 | EN 61347-2-13

In accordance with EN 61347-1, EN 61347-2-7, and EN 60929.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	EMERGENCY LUMEN FACTOR (BLF) :	85%
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	MAX. OUTPUT POWER :	9 x 3 W
MAX. CASING TEMPERATURE (tc) :	70 °C	OUTPUT VOLTAGE :	3,6 ... 28,8 VDC
RATED DURATION :	1 / 2 / 4 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II

PRODUCT LIST

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W) *	MAINS CURRENT (A) *	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-PW-1X1W/2H	3,6 V / 900 mAh (2 h)	1,5	0,011	39x221x34	0,215	30
EMLUS-PW-1X1W/4H	3,6 V / 1600 mAh (4 h)	1,7	0,013	39x221x34	0,235	30
EMLUS-PW-1X3W/1H	3,6 V / 900 mAh (1 h)	1,5	0,011	39x221x34	0,215	30
EMLUS-PW-1X3W/2H	3,6 V / 1600 mAh (2 h)	1,7	0,013	39x221x34	0,235	30
EMLUS-PW-2X1W/2H	9,6 V / 900 mAh (2 h)	1,9	0,012	39x221x34	0,215	30
EMLUS-PW-2X1W/4H	9,6 V / 1600 mAh (4 h)	2,9	0,017	39x221x34	0,235	30
EMLUS-PW-2X3W/1H	9,6 V / 900 mAh (1 h)	1,9	0,012	39x221x34	0,215	30
EMLUS-PW-2X3W/2H	9,6 V / 1600 mAh (2 h)	2,9	0,017	39x221x34	0,235	30

PRODUCT LIST (Con't)

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-PW-3X1W/2H	9,6 V / 900 mAh (2 h)	2,1	0,014	39x221x34	0,215	30
EMLUS-PW-3X1W/4H	9,6 V / 1600 mAh (4 h)	3,1	0,019	39x221x34	0,225	30
EMLUS-PW-3X3W/1H	9,6 V / 900 mAh (1 h)	2,1	0,014	39x221x34	0,215	30
EMLUS-PW-3X3W/2H	9,6 V / 1600 mAh (2 h)	3,1	0,019	39x221x34	0,225	30
EMLUS-PW-4X1W/2H	14,4 V / 900 mAh (2 h)	2,8	0,019	39x221x34	0,239	30
EMLUS-PW-4X1W/4H	14,4 V / 1600 mAh (4 h)	3,7	0,027	39x221x34	0,239	30
EMLUS-PW-4X3W/1H	14,4 V / 900 mAh (1 h)	2,8	0,019	39x221x34	0,239	30
EMLUS-PW-4X3W/2H	14,4 V / 1600 mAh (2 h)	3,7	0,027	39x221x34	0,239	30
EMLUS-PW-5X1W/2H	19,2 V / 900 mAh (2 h)	4,2	0,023	39x221x34	0,244	30
EMLUS-PW-5X1W/4H	19,2 V / 1600 mAh (4 h)	5,2	0,027	39x221x34	0,244	30
EMLUS-PW-5X3W/1H	19,2 V / 900 mAh (1 h)	4,2	0,023	39x221x34	0,244	30
EMLUS-PW-5X3W/2H	19,2 V / 1600 mAh (2 h)	5,2	0,027	39x221x34	0,244	30
EMLUS-PW-6X1W/2H	19,2 V / 900 mAh (2 h)	4,0	0,023	39x221x34	0,238	30
EMLUS-PW-6X1W/4H	19,2 V / 1600 mAh (4 h)	4,8	0,026	39x221x34	0,238	30
EMLUS-PW-6X3W/1H	19,2 V / 900 mAh (1 h)	4,0	0,023	39x221x34	0,238	30
EMLUS-PW-6X3W/2H	19,2 V / 1600 mAh (2 h)	4,8	0,026	39x221x34	0,238	30
EMLUS-PW-7X1W/2H	24 V / 900 mAh (2 h)	5,6	0,030	39x221x34	0,238	30
EMLUS-PW-7X1W/4H	24 V / 1600 mAh (4 h)	7,5	0,036	39x221x34	0,238	30
EMLUS-PW-7X3W/1H	24 V / 900 mAh (1 h)	5,6	0,030	39x221x34	0,238	30
EMLUS-PW-7X3W/2H	24 V / 1600 mAh (2 h)	7,5	0,036	39x221x34	0,238	30
EMLUS-PW-8X1W/2H	28,8 V / 900 mAh (2 h)	4,5	0,024	39x221x34	0,248	30
EMLUS-PW-8X1W/4H	28,8 V / 1600 mAh (4 h)	4,7	0,026	39x221x34	0,248	30
EMLUS-PW-8X3W/1H	28,8 V / 900 mAh (1 h)	4,5	0,024	39x221x34	0,248	30
EMLUS-PW-8X3W/2H	28,8 V / 1600 mAh (2 h)	4,7	0,026	39x221x34	0,248	30
EMLUS-PW-9X1W/2H	28,8 V / 900 mAh (2 h)	4,8	0,027	39x221x34	0,239	30
EMLUS-PW-9X1W/4H	28,8 V / 1600 mAh (4 h)	6,3	0,032	39x221x34	0,242	30
EMLUS-PW-9X3W/1H	28,8 V / 900 mAh (1 h)	4,8	0,027	39x221x34	0,239	30
EMLUS-PW-9X3W/2H	28,8 V / 1600 mAh (2 h)	6,3	0,032	39x221x34	0,242	30

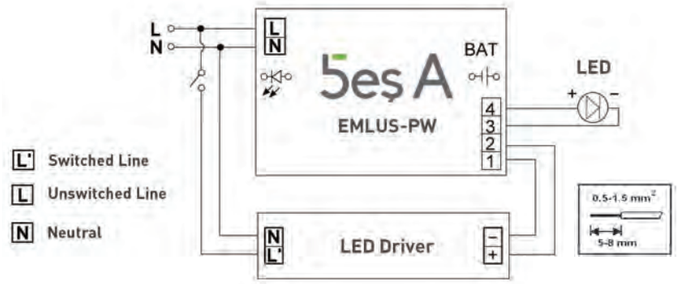
* Measured under 230 V mains.

BATTERY DATA

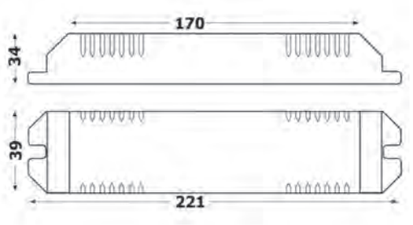
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
3,6 V	900 mAh	AA	14,5	3	14,5x50x14,5	0,084
3,6 V	1600 mAh	SC	23	3	23x135x23	0,135
9,6 V	900 mAh	AA	14,5	8	50x58x29	0,224
9,6 V	1600 mAh	SC	23	8	46x180x23	0,360
14,4 V	900 mAh	AA	14,5	12	50x87x29	0,336
14,4 V	1600 mAh	SC	23	12	46x135x46	0,540
19,2 V	900 mAh	AA	14,5	16	50x116x29	0,448
19,2 V	1600 mAh	SC	23	16	46x180x46	0,720
24 V	900 mAh	AA	14,5	20	50x145x29	0,560
24 V	1600 mAh	SC	23	20	46x225x46	0,900
28,8 V	900 mAh	AA	14,5	24	50x174x29	0,672
28,8 V	1600 mAh	SC	23	24	69x180x46	1,080

Please refer to "Battery Details Table" in "Emergency Lighting Unit Overview" section of the catalogue for further battery information.

WIRING DIAGRAM



TECHNICAL DRAWING



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING UNIT - LED
(EMLUS-12V)

- Compatible with 12 V LED Strip
- Compatible with all dimmable and non-dimmable, constant current LED control gears
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 h duration
- Emergency lighting function in case of low-voltage
- Constant voltage output
- Sustained constant 100% lighting
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Optional - test switch
- Optional - application of 110 V operating voltage
- Non-flammable ABS case
- Simple connectable terminal block

CE RoHS LED

SELV | 230 VAC 50/60 Hz | IP 20 | V0 ABS | CEM1 PCB | SMD | -|ıl|- Ni-Cd | EN 61347-2-7 | EN 61347-2-13

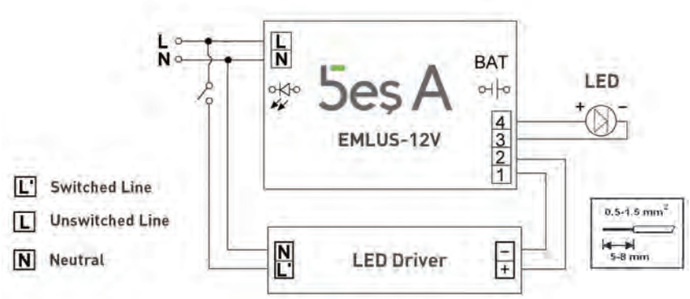
In accordance with EN 61347-1, EN 61347-2-7, and EN 60929.

BATTERY DATA

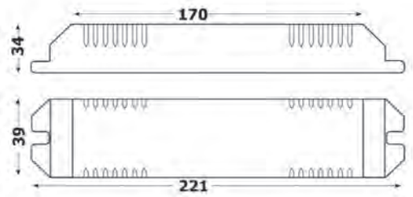
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
12 V	900 mAh	AA	14,5	10	50x72,5x29	0,230
12 V	1600 mAh	SC	23	10	46x113x46	0,450
12 V	3500 mAh	C	26	10	52x260x26	0,800
12 V	5000 mAh	D	35	10	70x310x35	1,300

Please refer to "Battery Details Table" in "Emergency Lighting Unit Overview" section of the catalogue for further battery information.

WIRING DIAGRAM



TECHNICAL DRAWING



TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	MAX. OUTPUT POWER :	12 V - 50 W
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	EMERGENCY LUMEN FACTOR (BLF) :	100%
MAX. CASING TEMPERATURE (tc) :	70 °C	OUTPUT VOLTAGE :	10 ... 14 V
RATED DURATION :	1 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 72 h	INSULATION CLASS :	II

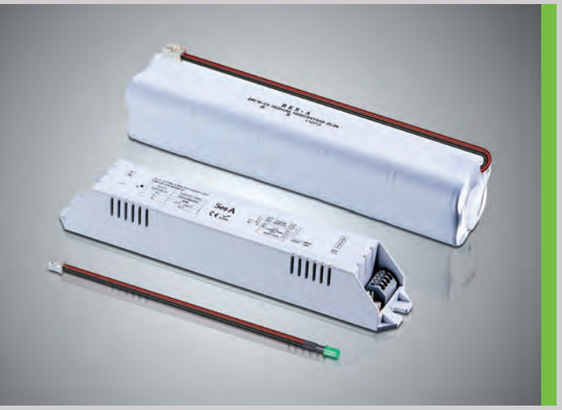
PRODUCT LIST

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-12V-008W	12 V / 900 mAh (1 h)	3,3	0,020	39x221x34	0,235	30
EMLUS-12V-015W	12 V / 1600 mAh (1 h)	4,4	0,025	39x221x34	0,235	30
EMLUS-12V-030W	12 V / 3500 mAh (1 h)	5,8	0,030	39x221x34	0,235	30
EMLUS-12V-050W	12 V / 5000 mAh (1 h)	7,2	0,036	39x221x34	0,235	30

* Measured under 230 V mains.

Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING UNIT - LED
(EMLUS-24V)



- Compatible with 24 V LED Strip
- Compatible with all dimmable and non-dimmable, constant current LED control gears
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 h duration
- Emergency lighting function in case of low-voltage
- Constant voltage output
- Sustained constant 100 % lighting
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Optional - test switch
- Optional - application of 110 V operating voltage
- Non-flammable ABS case
- Simple connectable terminal block

CE RoHS LED

SELV | 230 VAC 50/60 Hz | IP 20 | V0 ABS | CEM1 PCB | SMD | -|ıl|- Ni-Cd | EN 61347-2-7 | EN 61347-2-13

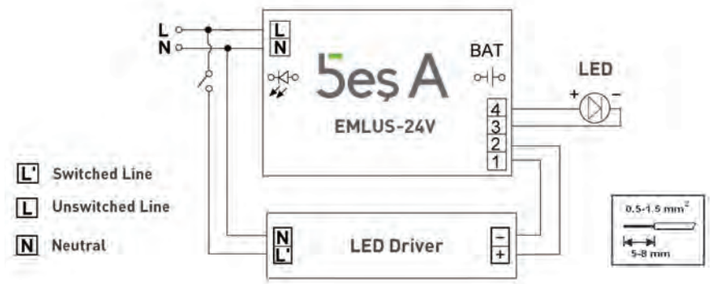
In accordance with EN 61347-1, EN 61347-2-7, and EN 60929.

BATTERY DATA

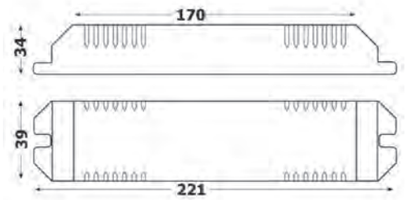
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
24 V	900 mAh	AA	14,5	20	50x145x29	0,460
24 V	1600 mAh	SC	23	20	46x225x46	0,900
24 V	3500 mAh	C	26	20	52x260x52	1,600
24 V	5000 mAh	D	35	20	70x310x70	2,600

Please refer to “Battery Details Table” in “Emergency Lighting Unit Overview” section of the catalogue for further battery information.

WIRING DIAGRAM



TECHNICAL DRAWING



TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	MAX. OUTPUT POWER :	24 V - 100 W
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	EMERGENCY LUMEN FACTOR (BLF) :	100%
MAX. CASING TEMPERATURE (tc) :	70 °C	OUTPUT VOLTAGE :	20 ... 28 V
RATED DURATION :	1 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 72 h	INSULATION CLASS :	II

PRODUCT LIST

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-24V-015W	24 V / 900 mAh (1 h)	5,3	0,028	39x221x34	0,235	30
EMLUS-24V-030W	24 V / 1600 mAh (1 h)	6,3	0,033	39x221x34	0,235	30
EMLUS-24V-060W	24 V / 3500 mAh (1 h)	7,2	0,035	39x221x34	0,235	30
EMLUS-24V-100W	24 V / 5000 mAh (1 h)	7,3	0,036	39x221x34	0,235	30

* Measured under 230 V mains.

Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING UNIT - LED
(EMLUS-220V)

- Compatible with 220 V LED tube and spot lighting
- Sustained constant 100% lighting
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Emergency lighting function in case of low-voltage
- DC voltage supply for LED Driver
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Optional - test switch
- Anodized aluminum case
- Simple connectable terminal block

CE RoHS LED SPOT LED LAMP

SELV | 230 VAC 50/60 Hz | IP 20 | 41 ALU | V0 ABS | CEM1 PCB | SMD | -|||- Ni-Cd | EN 61347-2-7

In accordance with EN 61347-1, EN 61347-2-7, and EN 60929.

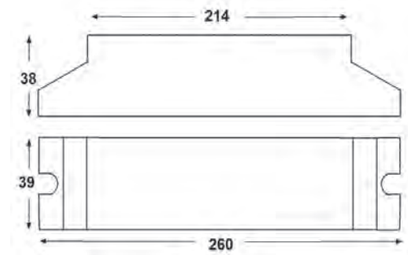
BATTERY DATA

VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
7,2 V	3000 mAh	C	26	6	26x294x26	0,480
7,2 V	6000 mAh	D	35	6	35x372x35	1,140
12 V	3000 mAh	C	26	10	52x245x26	0,800
12 V	4000 mAh	D	35	10	70x310x35	1,300
12 V	5000 mAh	D	35	10	70x310x35	1,600
12 V	6000 mAh	D	35	10	70x310x35	1,900
12 V	8000 mAh	D	35	20	70x310x70	2,600
12 V	10000 mAh	D	35	20	70x310x70	3,200

Please refer to “Battery Details Table” in “Emergency Lighting Unit Overview” section of the catalogue for further battery information.

WIRING DIAGRAM

TECHNICAL DRAWING



TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	EMERGENCY LUMEN FACTOR (BLF) :	100%
AMBIENT TEMPERATURE (ta) :	-10°C ... +50 °C	MAX. OUTPUT POWER :	30 W
MAX. CASING TEMPERATURE (tc) :	70 °C	OUTPUT VOLTAGE :	200...340 VDC
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	I

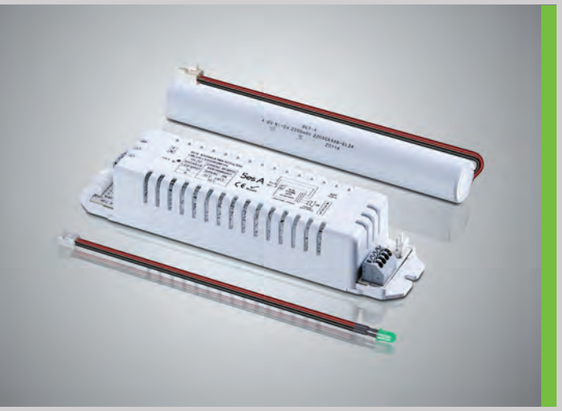
PRODUCT LIST

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-220/10W	7,2 V / 3000 mAh (1 h) 7,2 V / 6000 mAh (3 h)	4,5	0.023	39x260x38	0,340	25
EMLUS-220/20W	12 V / 3000 mAh (1 h) 12 V / 6000 mAh (3 h)	5,5	0.028	39x260x38	0,365	25
EMLUS-220/25W	12 V / 4000 mAh (1 h) 12 V / 8000 mAh (3 h)	5,5	0.028	39x260x38	0,365	25
EMLUS-220/30W	12 V / 5000 mAh (1 h) 12 V / 10000 mAh (3 h)	5,5	0.028	39x260x38	0,365	25

* Measured with 3-h circuits under 230 V mains.

Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING UNIT - LED
(EMLUS-220 SPOT)



- Compatible with 220 V / 3 W and 5 W LED spot
- Sustained constant 100% lighting
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Emergency lighting function in case of low-voltage
- DC voltage supply for/to LED Driver
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Optional - test switch
- Non-flammable ABS case
- Simple connectable terminal block

CE RoHS LED SPOT

SELV | 230 VAC 50/60 Hz | IP 20 | V0 ABS | CEM1 PCB | SMD | -|ıl|- Ni-Cd | EN 61347-2-7

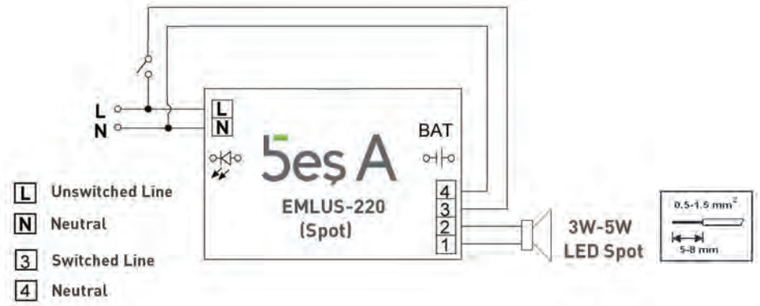
In accordance with EN 61347-1, EN 61347-2-7, and EN 60929.

BATTERY DATA

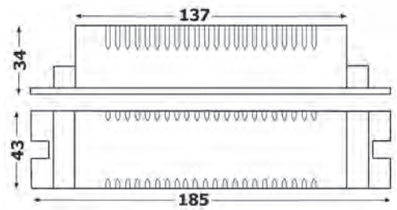
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
4,8 V	1600 mAh	SC	23	4	23x180x23	0,200
4,8 V	2200 mAh	SC	23	4	23x180x23	0,240
4,8 V	4000 mAh	D	35	4	35x248x35	0,520
4,8 V	5000 mAh	D	35	4	35x248x35	0,640

Please refer to “Battery Details Table” in “Emergency Lighting Unit Overview” section of the catalogue for further battery information.

WIRING DIAGRAM



TECHNICAL DRAWING



TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	EMERGENCY LUMEN FACTOR (BLF) :	100%
AMBIENT TEMPERATURE (ta) :	-10°C ... +50 °C	MAX. OUTPUT POWER :	5 W
MAX. CASING TEMPERATURE (tc) :	70 °C	OUTPUT VOLTAGE :	160...310 VDC
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II

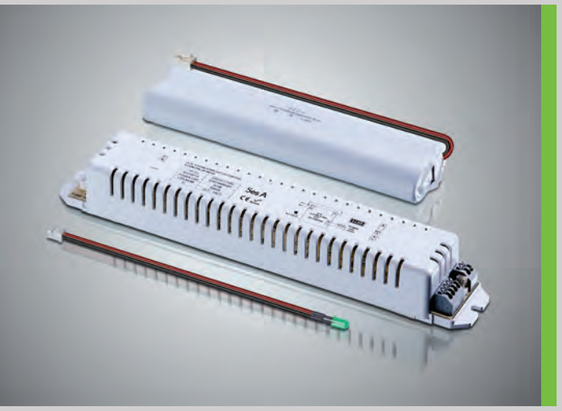
PRODUCT LIST

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-220/3W	4,8 V / 1600 mAh (1 h) 4,8 V / 4000 mAh (3 h)	3,9	0,020	43x185x34	0,225	30
EMLUS-220/5W	4,8 V / 2200 mAh (1 h) 4,8 V / 5000 mAh (3 h)	4,1	0,020	43x185x34	0,225	30

* Measured with 3-h circuits under 230 V mains.

Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING UNIT INTEGRATED - LED
(ECOM-PW)



optional

- Integrated LED driver and emergency lighting unit in the same PCB
- Compatible with LED lighting and COB LED
- Non-maintained operation
- Constant current output
- Short circuit protection and isolated output
- Emergency lighting function by interruption of the unswitched phase
- 1, 2, 3, 4 h duration
- Emergency lighting function in case of low-voltage
- Driving LED by semi constant current method
- Driving of 1 to 7 serially connected LED pieces
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Optional - test switch
- Optional - application of 110 V operating voltage
- Non-flammable ABS case
- Simple connectable terminal block

CE RoHS LED

SELV | 230 VAC 50/60 Hz | IP 20 | V0 ABS | CEM1 PCB | SMD | -|ılı- Ni-Cd | EN 61347-2-7 | EN 61347-2-13

In accordance with EN 61347-1, EN 61347-2-7, and EN 61347-2-13

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	EMERGENCY LUMEN FACTOR (BLF) :	85%
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	MAX. OUTPUT POWER :	10 W
MAX. CASING TEMPERATURE (tc) :	70 °C	OUTPUT VOLTAGE :	3,6 ... 24 VDC
RATED DURATION :	1 / 4 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II

PRODUCT LIST

PRODUCT CODE *	BATTERY CAPACITY	RATED POWER (W)**	MAINS CURRENT (A)*	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
ECOM-PW-1X1W/2H	3,6 V / 900 mAh (2 h)	2,9	0,023	42x264x34	0,265	30
ECOM-PW-1X1W/4H	3,6 V / 1600 mAh (4 h)	3,0	0,024	42x264x34	0,265	30
ECOM-PW-1X2W/1H	3,6 V / 900 mAh (1 h)	4,4	0,035	42x264x34	0,268	30
ECOM-PW-1X2W/3H	3,6 V / 1600 mAh (3 h)	4,7	0,037	42x264x34	0,268	30
ECOM-PW-1X3W/1H	3,6 V / 900 mAh (1 h)	5,5	0,045	42x264x34	0,268	30
ECOM-PW-1X3W/2H	3,6 V / 1600 mAh (2 h)	5,7	0,047	42x264x34	0,268	30

PRODUCT LIST (Con't)

PRODUCT CODE*	BATTERY CAPACITY	RATED POWER (W)**	MAINS CURRENT (A)*	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
ECOM-PW-2X1W/2H	9,6 V / 900 mAh (2 h)	5,1	0,039	42x264x34	0,275	30
ECOM-PW-2X1W/4H	9,6 V / 1600 mAh (4 h)	5,3	0,041	42x264x34	0,275	30
ECOM-PW-2X2W/1H	9,6 V / 900 mAh (1 h)	7,5	0,056	42x264x34	0,275	30
ECOM-PW-2X2W/3H	9,6 V / 1600 mAh (3 h)	8,1	0,061	42x264x34	0,275	30
ECOM-PW-2X3W/1H	9,6 V / 900 mAh (1 h)	10,2	0,074	42x264x34	0,275	30
ECOM-PW-2X3W/2H	9,6 V / 1600 mAh (2 h)	10,6	0,078	42x264x34	0,275	30
ECOM-PW-3X1W/2H	9,6 V / 900 mAh (2 h)	6,8	0,049	42x264x34	0,271	30
ECOM-PW-3X1W/4H	9,6 V / 1600 mAh (4 h)	7,1	0,052	42x264x34	0,271	30
ECOM-PW-3X2W/1H	9,6 V / 900 mAh (1 h)	10,0	0,074	42x264x34	0,271	30
ECOM-PW-3X2W/3H	9,6 V / 1600 mAh (3 h)	10,3	0,077	42x264x34	0,271	30
ECOM-PW-3X3W/1H	9,6 V / 900 mAh (1 h)	13,1	0,097	42x264x34	0,271	30
ECOM-PW-3X3W/2H	9,6 V / 1600 mAh (2 h)	13,7	0,100	42x264x34	0,271	30
ECOM-PW-4X1W/2H	14,4 V / 900 mAh (2 h)	8,4	0,060	42x264x34	0,292	30
ECOM-PW-4X1W/4H	14,4 V / 1600 mAh (4 h)	9,4	0,063	42x264x34	0,292	30
ECOM-PW-4X2W/1H	14,4 V / 900 mAh (1 h)	13	0,090	42x264x34	0,292	30
ECOM-PW-4X2W/3H	14,4 V / 1600 mAh (3 h)	14	0,093	42x264x34	0,292	30
ECOM-PW-5X1W/2H	19,2 V/900 mAh (2-h)	10,6	0,069	42x264x34	0,301	30
ECOM-PW-5X1W/4H	19,2 V/1600 mAh (4-h)	11,2	0,073	42x264x34	0,301	30
ECOM-PW-6X1W/2H	19,2 V / 900 mAh (2 h)	11,3	0,075	42x264x34	0,297	30
ECOM-PW-6X1W/4H	19,2 V / 1600 mAh (4 h)	12,9	0,080	42x264x34	0,297	30
ECOM-PW-7X1W/2H	24 V / 900 mAh (2 h)	12,0	0,080	42x264x34	0,301	30
ECOM-PW-7X1W/4H	24 V / 1600 mAh (4 h)	12,5	0,095	42x264x34	0,301	30

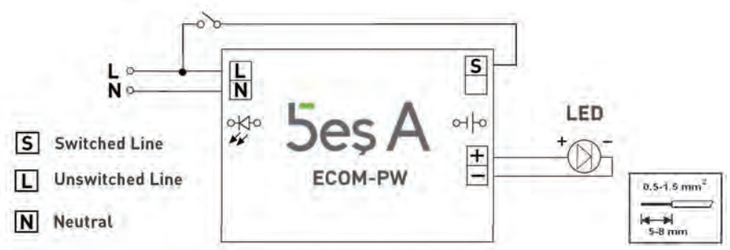
* LED drive current is 350mA for X1W, 700 mA for X2W, and 1050 mA for x3W.
** Measured under 230 V mains.

BATTERY DATA

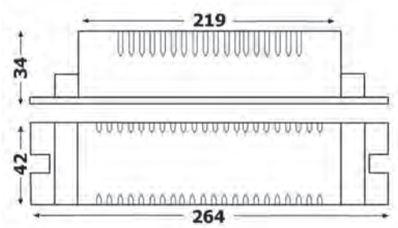
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
3,6 V	900 mAh	AA	14,5	3	29x50x29	0,084
3,6 V	1600 mAh	SC	23	3	23x135x23	0,135
9,6 V	900 mAh	AA	14,5	8	50x58x29	0,224
9,6 V	1600 mAh	SC	23	8	46x180x23	0,360
14,4 V	900 mAh	AA	14,5	12	50x87x29	0,336
14,4 V	1600 mAh	SC	23	12	46x135x46	0,540
19,2 V	900 mAh	AA	14,5	16	50x116x29	0,448
19,2 V	1600 mAh	SC	23	16	46x180x46	0,720
24 V	900 mAh	AA	14,5	20	50x145x29	0,560
24 V	1600 mAh	SC	23	20	46x225x46	0,900
28,8 V	900 mAh	AA	14,5	24	50x174x29	0,672
28,8 V	1600 mAh	SC	23	24	69x180x46	1,080

Please refer to "Battery Details Table" in "Emergency Lighting Unit Overview" section of the catalogue for further battery information.

WIRING DIAGRAM

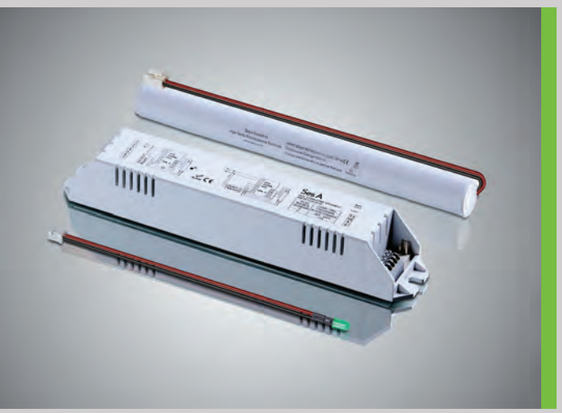


TECHNICAL DRAWING



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING UNIT
FLUORESCENT LAMP
(EMLUS-T5)



- Compatible with electronic and magnetic ballast
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Emergency lighting function in case of low-voltage
- Single or double lamp preference in case of emergency
- Compatible with 4-pin fluorescent lamps
- Prolonging the lamp life with warm-start
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Optional - test switch
- Optional - application of 110 V operating voltage
- Non-flammable ABS case
- Simple connectable terminal block

CE RoHS TL5/4P

SELV | 230 VAC 50/60 Hz | IP 20 | -|ıl|- Ni-Cd | V0 ABS | CEM1 PCB | SMD | EN 61347-2-7

In accordance with EN 61347-1, EN 61347-2-7, and EN 60929.

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-T5/06-08/1H	3,6 V / 1000 mAh	1,4	0,013	39x221x34	0,185	30
EMLUS-T5/06-08/3H	3,6 V / 3000 mAh	2,1	0,015	39x221x34	0,185	30
EMLUS-T5/13-54/1H	6 V / 1800 mAh	2,7	0,016	39x221x34	0,215	30
EMLUS-T5/13-24/3H	6 V / 4000 mAh	3,5	0,018	39x221x34	0,215	30
EMLUS-T5/39-54/3H	6 V / 5000 mAh	3,9	0,023	39x221x34	0,215	30
EMLUS-T5/40-55/1H	7,2 V / 2200 mAh	2,8	0,016	39x221x34	0,215	30
EMLUS-T5/40-55/3H	7,2 V / 6000 mAh	3,8	0,020	39x221x34	0,215	30
EMLUS-T5/28-80/1H	7,2 V / 2200 mAh	2,8	0,016	39x221x34	0,215	30
EMLUS-T5/28-80/3H	7,2 V / 6000 mAh	3,8	0,020	39x221x34	0,215	30
EMLUS-T5/213-14/1H	7,2 V / 2200 mAh	2,8	0,016	39x221x34	0,215	30
EMLUS-T5/213-14/3H	7,2 V / 6000 mAh	3,8	0,020	39x221x34	0,215	30

* Measured under 230 V mains.

EMERGENCY LUMEN FACTOR (BLF)

PRODUCT	8W-T5	14W-T5	21W-T5	24W-T5	28W-T5	35W-T5	39W-T5	49W-T5	54W-T5	80W-T5
EMLUS-T5	30%	25%	17%	18%	16%	15%	16%	15%	13%	10%

BATTERY DATA

VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
3,6 V	1000 mAh	AA	14,5	3	14,5x150x14,5	0,084
3,6 V	3000 mAh	C	26	3	26x256x26	0,240
6 V	1800 mAh	SC	23	5	23x225x23	0,250
6 V	4000 mAh	D	35	5	35x310x35	0,650
6 V	5000 mAh	D	35	5	35x310x35	0,800
7,2 V	2200 mAh	SC	23	6	23x270x23	0,360
7,2 V	6000 mAh	D	35	6	35x372x35	1,140

Please refer to “Battery Details Table” in “Emergency Lighting Unit Overview” section of the catalogue for further battery information.

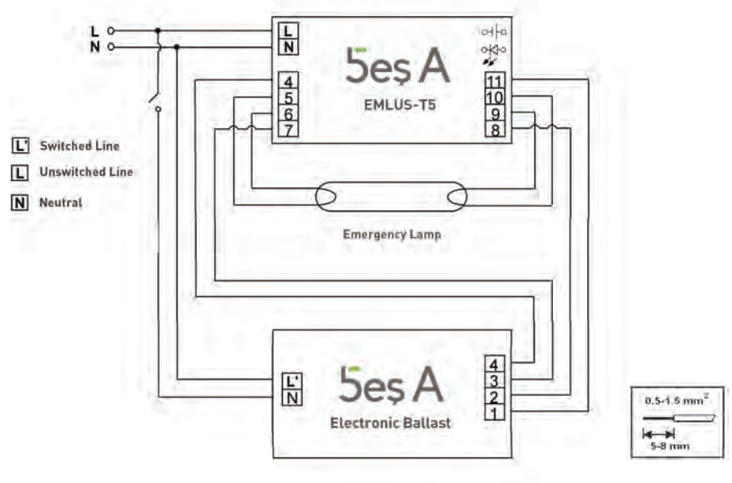
TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	BATTERY CHARGING TIME :	24 / 48 h
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	EMERGENCY LUMEN FACTOR (BLF) :	>10%
MAX. CASING TEMPERATURE (tc) :	70 °C	PROTECTION CLASS :	IP 20
RATED DURATION :	1 / 3 h	INSULATION CLASS :	II

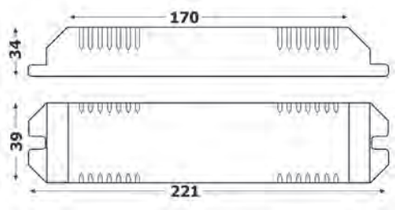
PRODUCT LIST

PRODUCT CODE	RATED DURATION	LAMP POWER	LAMP TYPE	NUMBER OF EMERGENCY LAMP
EMLUS-T5/06-08/1H	1 h	6-8 W	4-pin T5	Single Lamp
EMLUS-T5/06-08/3H	3 h	6-8 W	4-pin T5	Single Lamp
EMLUS-T5/13-54/1H	1 h	13-14-21-24-39-54 W	4-pin T5	Single Lamp
EMLUS-T5/13-24/3H	3 h	13-14-21-24 W	4-pin T5	Single Lamp
EMLUS-T5/39-54/3H	3 h	39-54 W	4-pin T5	Single Lamp
EMLUS-T5/40-55/1H	1 h	40-55 W (round)	4-pin T5	Single Lamp
EMLUS-T5/40-55/3H	3 h	40-55 W (round)	4-pin T5	Single Lamp
EMLUS-T5/28-80/1H	1 h	28-35-49-80 W	4-pin T5	Single Lamp
EMLUS-T5/28-80/3H	3 h	28-35-49-80 W	4-pin T5	Single Lamp
EMLUS-T5/213-14/1H	1 h	2x13 - 14 W	4-pin T5	Double Lamp
EMLUS-T5/213-14/3H	3 h	2x13 - 14 W	4-pin T5	Double Lamp

WIRING DIAGRAM

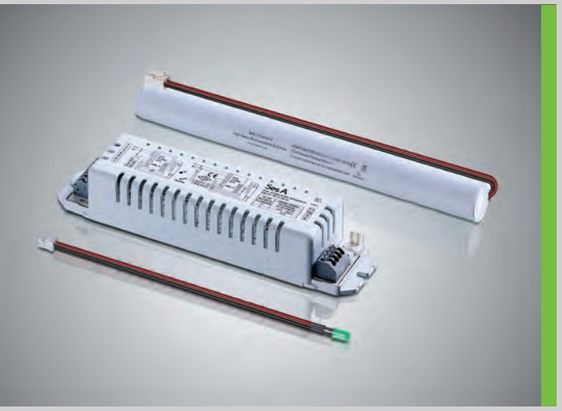


TECHNICAL DRAWING



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING UNIT
FLUORESCENT LAMP
(EMLUS-T8)



- Compatible with electronic and magnetic ballast
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Emergency lighting function in case of low-voltage
- Single or double lamp preference in case of emergency
- Compatible with 4-pin fluorescent lamps
- Prolonging the lamp life with warm-start
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Optional - test switch
- Optional - application of 110 V operating voltage
- Non-flammable ABS case
- Simple connectable terminal block

CE · RoHS · TSE · TL-D/4P · SELV · 230 VAC 50/60 Hz · IP 20 · -|ıl|- Ni-Cd · V0 ABS · CEM1 PCB · SMD · EN 61347-2-7

In accordance with EN 61347-1, EN 61347-2-7, and EN 60929.

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-T8/15-58/1H	6 V / 1800 mAh	3,8	0,020	43x185x34	0,238	30
EMLUS-T8/15-36/3H	6 V / 4000 mAh	4,3	0,022	43x185x34	0,242	30
EMLUS-T8/58/3H	6 V / 5000 mAh	5,2	0,027	43x185x34	0,257	30
EMLUS-T8/215-18/1H	7,2 V / 2200 mAh	4,2	0,021	43x185x34	0,236	30
EMLUS-T8/215-18/3H	7,2 V / 6000 mAh	5,7	0,028	43x185x34	0,255	30

* Measured under 230 V mains.

EMERGENCY LUMEN FACTOR (BLF)

PRODUCT	15W-T8	18W -T8	30W -T8	36W -T8	58W -T8
EMLUS-T8	16%	15%	12%	11%	10%

BATTERY DATA

VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
6 V	1800 mAh	SC	23	5	23x225x23	0,250
6 V	4000 mAh	D	35	5	35x310x35	0,650
6 V	5000 mAh	D	35	5	35x310x35	0,800
7,2 V	2200 mAh	SC	23	6	23x270x23	0,360
7,2 V	6000 mAh	D	35	6	35x372x35	1,140

Please refer to “Battery Details Table” in “Emergency Lighting Unit Overview” section of the catalogue for further battery information.

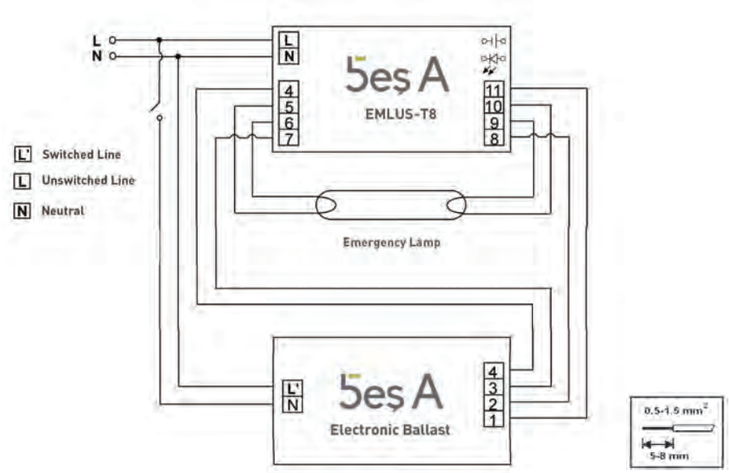
TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	BATTERY CHARGING TIME :	24 / 48 h
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	EMERGENCY LUMEN FACTOR (BLF) :	>10%
MAX. CASING TEMPERATURE (tc) :	70 °C	PROTECTION CLASS :	IP 20
RATED DURATION :	1 / 3 h	INSULATION CLASS :	II

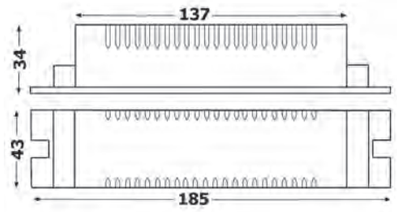
PRODUCT LIST

PRODUCT CODE	RATED DURATION	LAMP POWER	LAMP TYPE	NUMBER OF EMERGENCY LAMP
EMLUS-T8/15-58/1H	1 h	15-18-30-36-58 W	4-pin T8	Single Lamp
EMLUS-T8/15-36/3H	3 h	15-18-30-36 W	4-pin T8	Single Lamp
EMLUS-T8/58/3H	3 h	58 W	4-pin T8	Single Lamp
EMLUS-T8/215-18/1H	1 h	2x15-18 W	4-pin T8	Double Lamp
EMLUS-T8/215-18/3H	3 h	2x15-18 W	4-pin T8	Double Lamp

WIRING DIAGRAM

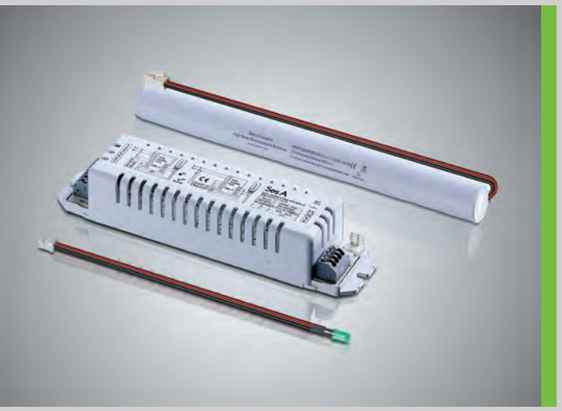


TECHNICAL DRAWING



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING UNIT
FLUORESCENT LAMP
(EMLUS-PLL)



- Compatible with electronic and magnetic ballast
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Emergency lighting function in case of low-voltage
- Single or double lamp preference in case of emergency
- Compatible with 4-pin fluorescent lamps
- Prolonging the lamp life with warm-start
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Optional - test switch
- Optional - application of 110 V operating voltage
- Non-flammable ABS case
- Simple connectable terminal block

CE · RoHS · PL-L/4P

SELV · 230 VAC 50/60 Hz · IP20 · -|ıı|- Ni-Cd · V0 ABS · CEM1 PCB · SMD · EN 61347-2-7

In accordance with EN 61347-1, EN 61347-2-7, and EN 60929.

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-PLL/11-55/1H	6 V / 1800 mAh	3,8	0,020	43x185x34	0,238	30
EMLUS-PLL/11-36/3H	6 V / 4000 mAh	4,3	0,022	43x185x34	0,242	30
EMLUS-PLL/55/3H	6 V / 5000 mAh	5,2	0,027	43x185x34	0,257	30
EMLUS-PLL/211-24/1H	7,2 V / 2200 mAh	4,2	0,021	43x185x34	0,236	30
EMLUS-PLL/211-24/3H	7,2 V / 6000 mAh	5,7	0,028	43x185x34	0,255	30

* Measured under 230 V mains.

EMERGENCY LUMEN FACTOR (BLF)

PRODUCT	11W-PLL	18W-PLL	24W-PLL	36W-PLL	55W-PLL
EMLUS-PLL	30%	17%	16%	13%	11%

BATTERY DATA

VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
6 V	1800 mAh	SC	23	5	23x225x23	0,250
6 V	4000 mAh	D	35	5	35x310x35	0,650
6 V	5000 mAh	D	35	5	35x310x35	0,800
7,2 V	2200 mAh	SC	23	6	23x270x23	0,360
7,2 V	6000 mAh	D	35	6	35x372x35	1,140

Please refer to “Battery Details Table” in “Emergency Lighting Unit Overview” section of the catalogue for further battery information.

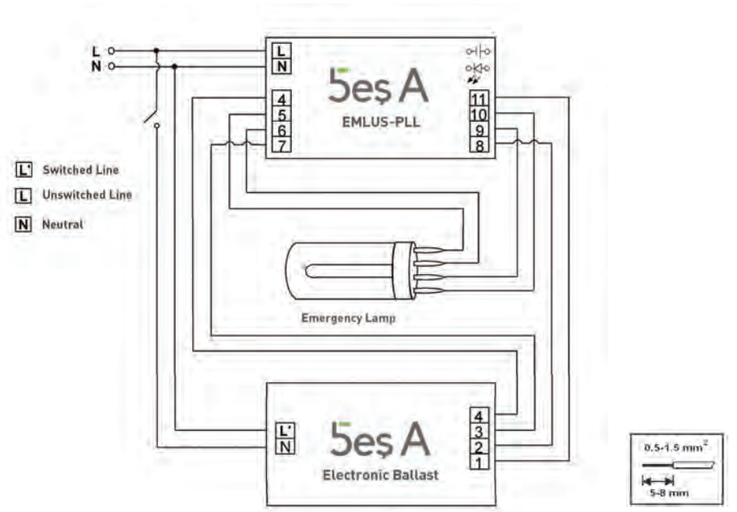
TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	BATTERY CHARGING TIME :	24 / 48 h
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	EMERGENCY LUMEN FACTOR (BLF) :	>10%
MAX. CASING TEMPERATURE (tc) :	70 °C	PROTECTION CLASS :	IP 20
RATED DURATION :	1 / 3 h	INSULATION CLASS :	II

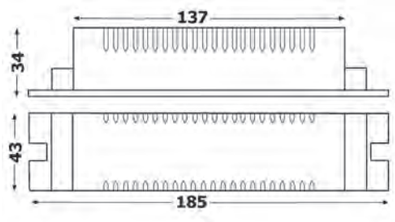
PRODUCT LIST

PRODUCT CODE	RATED DURATION	LAMP POWER	LAMP TYPE	NUMBER OF EMERGENCY LAMP
EMLUS-PLL/11-55/1H	1 h	11-18-24-36-55 W	4-pin PLL	Single Lamp
EMLUS-PLL/11-36/3H	3 h	11-18-24-36 W	4-pin PLL	Single Lamp
EMLUS-PLL/55/3H	3 h	55 W	4-pin PLL	Single Lamp
EMLUS-PLL/211-24/1H	1 h	2x11-18-24 W	4-pin PLL	Double Lamp
EMLUS-PLL/211-24/3H	3 h	2x11-18-24 W	4-pin PLL	Double Lamp

WIRING DIAGRAM

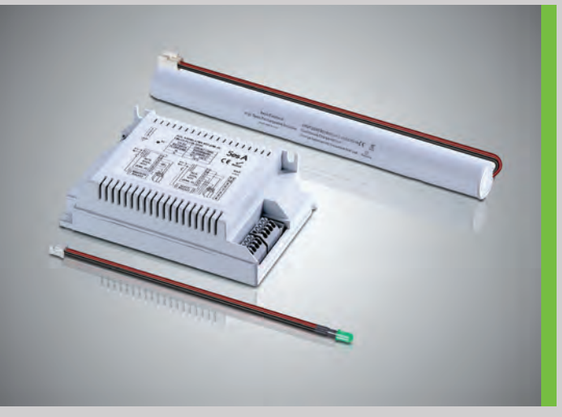


TECHNICAL DRAWING



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING UNIT
FLUORESCENT LAMP
(EMLUS-PLC)



- Compatible with electronic and magnetic ballast
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Emergency lighting function in case of low-voltage
- Single or double lamp preference in case of emergency
- Compatible with 4-pin fluorescent lamps
- Prolonging the lamp life with warm-start
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Optional - test switch
- Optional - application of 110 V operating voltage
- Non-flammable ABS case
- Simple connectable terminal block

PL-T/C/4P

SELV | 230 VAC 50/60 Hz | IP 20 | -|ıl|- Ni-Cd | V0 ABS | CEM1 PCB | SMD | EN 61347-2-7

In accordance with EN 61347-1, EN 61347-2-7, and EN 60929.

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-PLC/10-32/1H	6 V / 1800 mAh	3,8	0,020	78x123x36	0,264	25
EMLUS-PLC/10-18/3H	6 V / 4000 mAh	4,3	0,022	78x123x36	0,268	25
EMLUS-PLC/26-32/3H	6 V / 5000 mAh	5,2	0,027	78x123x36	0,282	25
EMLUS-PLC/42/1H	7,2 V / 2200 mAh	4,2	0,021	78x123x36	0,265	25
EMLUS-PLC/42/3H	7,2 V / 6000 mAh	5,7	0,028	78x123x36	0,286	25
EMLUS-PLC/210-18/1H	7,2 V / 2200 mAh	4,2	0,021	78x123x36	0,265	25
EMLUS-PLC/210-18/3H	7,2 V / 6000 mAh	5,7	0,028	78x123x36	0,286	25

* Measured under 230 V mains.

EMERGENCY LUMEN FACTOR (BLF)

PRODUCT	10W-PLC	13W-PLC	18W-PLC	26W-PLC	32W-PLC	42W-PLC
EMLUS-PLC	35%	30%	30%	22%	16%	15%

BATTERY DATA

VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
6 V	1800 mAh	SC	23	5	23x225x23	0,250
6 V	4000 mAh	D	35	5	35x310x35	0,650
6 V	5000 mAh	D	35	5	35x310x35	0,800
7,2 V	2200 mAh	SC	23	6	23x270x23	0,360
7,2 V	6000 mAh	D	35	6	35x372x35	1,140

Please refer to "Battery Details Table" in "Emergency Lighting Unit Overview" section of the catalogue for further battery information.

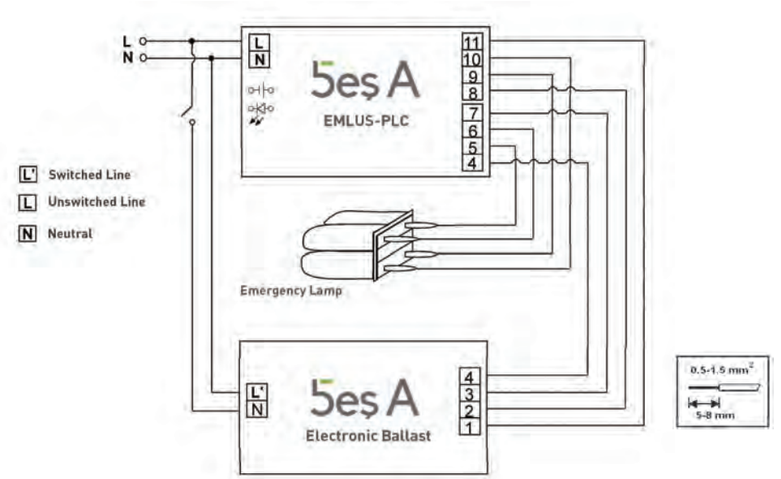
TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	BATTERY CHARGING TIME :	24 / 48 h
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	EMERGENCY LUMEN FACTOR (BLF) :	>10 %
MAX. CASING TEMPERATURE (tc) :	70 °C	PROTECTION CLASS :	IP 20
RATED DURATION :	1 / 3 h	INSULATION CLASS :	II

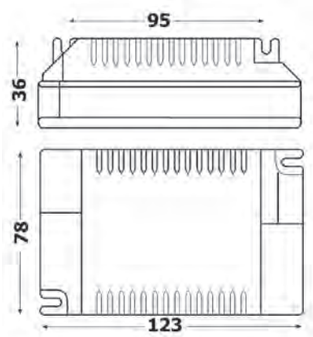
PRODUCT LIST

PRODUCT CODE	RATED DURATION	LAMP POWER	LAMP TYPE	NUMBER OF EMERGENCY LAMP
EMLUS-PLC/10-32/1H	1 h	10-13-18-26-32 W	4-pin PLC	Single Lamp
EMLUS-PLC/10-18/3H	3 h	10-13-18 W	4-pin PLC	Single Lamp
EMLUS-PLC/26-32/3H	3 h	26-32 W	4-pin PLC	Single Lamp
EMLUS-PLC/42/1H	1 h	42 W	4-pin PLC	Single Lamp
EMLUS-PLC/42/3H	3 h	42 W	4-pin PLC	Single Lamp
EMLUS-PLC/210-18/1H	1 h	2x10-13-18 W	4-pin PLC	Double Lamp
EMLUS-PLC/210-18/3H	3 h	2x10-13-18 W	4-pin PLC	Double Lamp

WIRING DIAGRAM



TECHNICAL DRAWING



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING UNIT
INTEGRATED - FLUORESCENT LAMP
(ECOM-T5)

- Integrated electronic ballast and emergency lighting unit in the same PCB
- Non-maintained operation
- Low rating current
- Silent and vibration-free lighting
- Easy assembly of luminary due to integrated design
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Emergency lighting function in case of low-voltage
- Compatible with 4-pin fluorescent lamps
- Prolonging the life of the lamp with warm-start
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Optional - test switch
- Optional - application of 110 V operating voltage
- Non-flammable ABS case
- Simple connectable terminal block

CE RoHS TL5/4P

SELV | 230 VAC 50/60 Hz | EEI=A3 | IP 20 | -|||- Ni-Cd | V0 ABS | CEM1 PCB | SMD | EN 61347-2-3 | EN 61347-2-7

In accordance with EN 61347-1, EN 61347-2-3, EN 61347-2-7.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	EMERGENCY LUMEN FACTOR (BLF) :	> 10 %
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	BALLAST LUMEN FACTOR :	> 75%
MAX. CASING TEMPERATURE (tc) :	70 °C	ENERGY EFFICIENCY INDEX :	EEI = A3
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II

PRODUCT LIST

PRODUCT CODE	RATED DURATION	LAMP POWER	LAMP TYPE	BALLAST POWER FACTOR
ECOM-T5-10608/1H	1 h	1x6-8 W	4-pin T5	0,70
ECOM-T5-10608/3H	3 h	1x6-8 W	4-pin T5	0,70
ECOM-T5-11314/1H	1 h	1x13-14 W	4-pin T5	0,70
ECOM-T5-11314/3H	3 h	1x13-14 W	4-pin T5	0,70
ECOM-T5-12124/1H	1 h	1x21-24 W	4-pin T5	0,70
ECOM-T5-12124/3H	3 h	1x21-24 W	4-pin T5	0,70
ECOM-T5-12835/1H	1 h	1x28-35 W	4-pin T5	0,70
ECOM-T5-12835/3H	3 h	1x28-35 W	4-pin T5	0,70
ECOM-T5-139/1H	1 h	1x39 W	4-pin T5	0,70
ECOM-T5-139/3H	3 h	1x39 W	4-pin T5	0,70

PRODUCT LIST (Con't)

PRODUCT CODE	RATED DURATION	LAMP POWER	LAMP TYPE	BALLAST POWER FACTOR
ECOM-T5-149/1H	1 h	1x49 W	4-pin T5	0,70
ECOM-T5-149/3H	3 h	1x49 W	4-pin T5	0,70
ECOM-T5-154/1H	1 h	1x54 W	4-pin T5	0,70
ECOM-T5-154/3H	3 h	1x54 W	4-pin T5	0,70
ECOM-T5-180/1H	1 h	1x80 W	4-pin T5	0,70
ECOM-T5-180/3H	3 h	1x80 W	4-pin T5	0,70

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
ECOM-T5-10608/1H	3,6 V / 1000 mAh	10	0,070	39x221x34	0,245	30
ECOM-T5-10608/3H	3,6 V / 3000 mAh	11	0,075	39x221x34	0,245	30
ECOM-T5-11314/1H	6 V / 1800 mAh	17	0,100	39x221x34	0,285	30
ECOM-T5-11314/3H	6 V / 4000 mAh	18	0,110	39x221x34	0,285	30
ECOM-T5-12124/1H	6 V / 1800 mAh	22	0,130	39x221x34	0,290	30
ECOM-T5-12124/3H	6 V / 4000 mAh	23	0,140	39x221x34	0,290	30
ECOM-T5-12835/1H	7,2 V / 2200 mAh	30	0,195	39x221x34	0,295	30
ECOM-T5-12835/3H	7,2 V / 6000 mAh	31	0,205	39x221x34	0,295	30
ECOM-T5-139/1H	6 V / 1800 mAh	35	0,220	39x221x34	0,310	30
ECOM-T5-139/3H	6 V / 5000 mAh	36	0,230	39x221x34	0,310	30
ECOM-T5-149/1H	7,2 V / 2200 mAh	35	0,220	39x221x34	0,310	30
ECOM-T5-149/3H	7,2 V / 6000 mAh	40	0,260	39x221x34	0,310	30
ECOM-T5-154/1H	6 V / 1800 mAh	35	0,220	39x221x34	0,310	30
ECOM-T5-154/3H	6 V / 5000 mAh	36	0,230	39x221x34	0,310	30
ECOM-T5-180/1H	7,2 V / 2200 mAh	45	0,250	39x221x34	0,310	30
ECOM-T5-180/3H	7,2 V / 6000 mAh	49	0,300	39x221x34	0,310	30

* Measured with maximum power under 230 V mains.

EMERGENCY LUMEN FACTOR (BLF)

PRODUCT	8W-T5	14W-T5	21W-T5	24W-T5	28W-T5	35W-T5	39W-T5	49W-T5	54W-T5	80W-T5
ECOM-T5	30%	25%	17%	18%	16%	15%	16%	15%	13%	10%

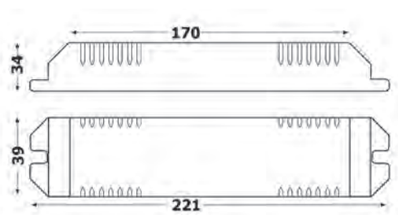
BATTERY DATA

VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
3,6 V	1000 mAh	AA	14,5	3	14,5x150x14,5	0,084
3,6 V	3000 mAh	C	26	3	26x256x26	0,240
6 V	1800 mAh	SC	23	5	23x225x23	0,250
6 V	4000 mAh	D	35	5	35x310x35	0,650
6 V	5000 mAh	D	35	5	35x310x35	0,800
7,2 V	2200 mAh	SC	23	6	23x270x23	0,360
7,2 V	6000 mAh	D	35	6	35x372x35	1,140

Please refer to "Battery Details Table" in "Emergency Lighting Unit Overview" section of the catalogue for further battery information.

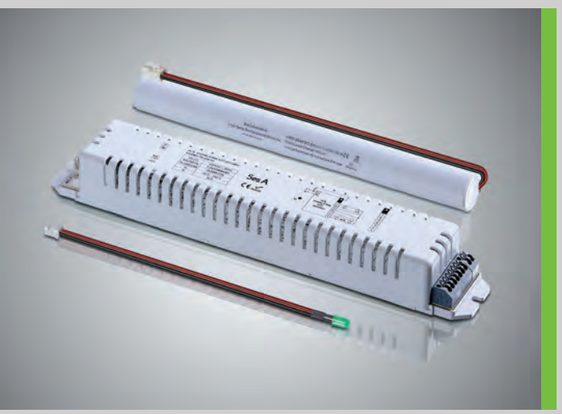
WIRING DIAGRAM

TECHNICAL DRAWING



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING UNIT
INTEGRATED - FLUORESCENT LAMP
(ECOM2-T5)



- Integrated electronic ballast and emergency lighting unit in the same PCB
- Non-maintained operation
- Low rating current
- Silent and vibration-free lighting
- Lighting 2 lamps with one electronic ballast
- Easy assembly of luminary due to integrated design
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Emergency lighting function in case of low-voltage
- Compatible with 4-pin fluorescent lamps
- Prolonging the life of the lamp with warm-start
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Optional - test switch
- Optional - application of 110 V operating voltage
- Non-flammable ABS case
- Simple connectable terminal block

CE RoHS TL5/4P

SELV | 230 VAC 50/60 Hz | EEI=A3 | IP 20 | -|||- Ni-Cd | V0 ABS | CEM1 PCB | SMD | EN 61347-2-7 | EN 61347-2-3

In accordance with EN 61347-1, EN 61347-2-3, and EN 61347-2-7.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	EMERGENCY LUMEN FACTOR (BLF) :	> 10%
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	BALLAST LUMEN FACTOR :	> 75%
MAX. CASING TEMPERATURE (tc) :	70 °C	ENERGY EFFICIENCY INDEX :	EEI = A3
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II

PRODUCT LIST

PRODUCT CODE	RATED DURATION	LAMP POWER	LAMP TYPE	BALLAST POWER FACTOR	NUMBER OF EMERGENCY LAMP
ECOM2-T5-21314/1H	1 h	2x13 - 14 W	4-pin T5	0,70	Single Lamp
ECOM2-T5-21314/3H	3 h	2x13 - 14 W	4-pin T5	0,70	Single Lamp
ECOM2-T5-221/1H	1 h	2x21 W	4-pin T5	0,70	Single Lamp
ECOM2-T5-221/3H	3 h	2x21 W	4-pin T5	0,70	Single Lamp
ECOM2-T5-224/1H	1 h	2x24 W	4-pin T5	0,70	Single Lamp
ECOM2-T5-224/3H	3 h	2x24 W	4-pin T5	0,70	Single Lamp
ECOM2-T5-228/1H	1 h	2x28 W	4-pin T5	0,70	Single Lamp
ECOM2-T5-228/3H	3 h	2x28 W	4-pin T5	0,70	Single Lamp
ECOM2-T5-235/1H	1 h	2x35 W	4-pin T5	0,70	Single Lamp
ECOM2-T5-235/3H	3 h	2x35 W	4-pin T5	0,70	Single Lamp
ECOM2-T5-239/1H	1 h	2x39 W	4-pin T5	0,70	Single Lamp
ECOM2-T5-239/3H	3 h	2x39 W	4-pin T5	0,70	Single Lamp

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
ECOM2-T5-21314/1H	6 V / 1800 mAh	30	0,190	42x264x34	0,325	30
ECOM2-T5-21314/3H	6 V / 4000 mAh	31	0,195	42x264x34	0,329	30
ECOM2-T5-221/1H	6 V / 1800 mAh	57	0,380	42x264x34	0,325	30
ECOM2-T5-221/3H	6 V / 4000 mAh	58	0,385	42x264x34	0,329	30
ECOM2-T5-224/1H	6 V / 1800 mAh	53	0,325	42x264x34	0,325	30
ECOM2-T5-224/3H	6 V / 4000 mAh	54	0,330	42x264x34	0,329	30
ECOM2-T5-228/1H	7,2 V / 2200 mAh	62	0,405	42x264x34	0,327	30
ECOM2-T5-228/3H	7,2 V / 6000 mAh	63	0,410	42x264x34	0,330	30
ECOM2-T5-235/1H	7,2 V / 2200 mAh	54	0,345	42x264x34	0,327	30
ECOM2-T5-235/3H	7,2 V / 6000 mAh	55	0,350	42x264x34	0,330	30
ECOM2-T5-239/1H	6 V / 1800 mAh	61	0,410	42x264x34	0,325	30
ECOM2-T5-239/3H	6 V / 5000 mAh	62	0,415	42x264x34	0,329	30

* Measured with maximum power under 230 V mains.

EMERGENCY LUMEN FACTOR (BLF)

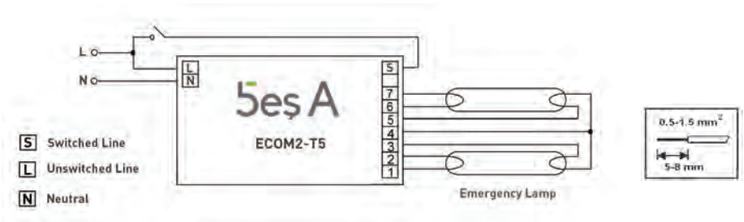
PRODUCT	8W-T5	14W-T5	21W-T5	24W-T5	28W-T5	35W-T5	39W-T5
ECOM2-T5	30%	25%	17%	18%	16%	15%	16%

BATTERY DATA

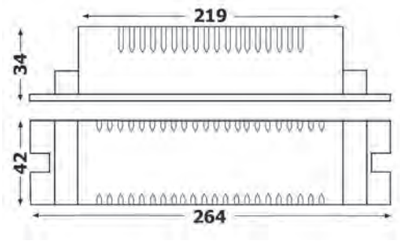
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
6 V	1800 mAh	SC	23	5	23x225x23	0,250
6 V	4000 mAh	D	35	5	35x310x35	0,650
6 V	5000 mAh	D	35	5	35x310x35	0,800
7,2 V	2200 mAh	SC	23	6	23x270x23	0,360
7,2 V	6000 mAh	D	35	6	35x372x35	1,140

Please refer to “Battery Details Table” in “Emergency Lighting Unit Overview” section of the catalogue for further battery information.

WIRING DIAGRAM

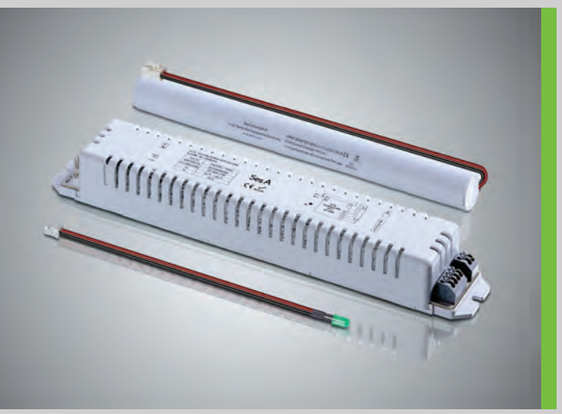


TECHNICAL DRAWING



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING UNIT
INTEGRATED - FLUORESCENT LAMP
(ECOM-T8)



optional

- Integrated electronic ballast and emergency lighting unit in the same PCB
- Non-maintained operation
- Low rating current
- Silent and vibration-free lighting
- Easy assembly of luminary due to integrated design
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Emergency lighting function in case of low-voltage
- Compatible with 4-pin fluorescent lamps
- Prolonging the life of the lamp with warm-start
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Optional - test switch
- Optional - application of 110 V operating voltage
- Non-flammable ABS case
- Simple connectable terminal block

TL-D/4P

SELV | 230 VAC 50/60 Hz | EEI=A3 | IP 20 | -III- Ni-Cd | V0 ABS | CEM1 PCB | SMD | EN 61347-2-7 | EN 61347-2-3

In accordance with EN 61347-1, EN 61347-2-3, and EN 61347-2-7.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	EMERGENCY LUMEN FACTOR (BLF) :	> 10%
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	BALLAST LUMEN FACTOR :	> 75%
MAX. CASING TEMPERATURE (tc) :	70 °C	ENERGY EFFICIENCY INDEX :	EEI = A3
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II

PRODUCT LIST

PRODUCT CODE	RATED DURATION	LAMP POWER	LAMP TYPE	BALLAST POWER FACTOR
ECOM-T8-11518/1H	1 h	1x15 - 18 W	4-pin T8	0,70
ECOM-T8-11518/3H	3 h	1x15 - 18 W	4-pin T8	0,70
ECOM-T8-13036/1H	1 h	1x30 - 36 W	4-pin T8	0,70
ECOM-T8-13036/3H	3 h	1x30 - 36 W	4-pin T8	0,70
ECOM-T8-158/1H	1 h	1x58 W	4-pin T8	0,70
ECOM-T8-158/3H	3 h	1x58 W	4-pin T8	0,70

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
ECOM-T8-11518/1H	6V / 1800 mAh	15	0,095	42x264x34	0,309	30
ECOM-T8-11518/3H	6V / 4000 mAh	16	0,100	42x264x34	0,309	30
ECOM-T8-13036/1H	6V / 1800 mAh	31	0,200	42x264x34	0,311	30
ECOM-T8-13036/3H	6V / 4000 mAh	32	0,205	42x264x34	0,311	30
ECOM-T8-158/1H	6V / 1800 mAh	35	0,225	42x264x34	0,307	30
ECOM-T8-158/3H	6V / 5000 mAh	36	0,230	42x264x34	0,307	30

* Measured with maximum power under 230 V mains.

EMERGENCY LUMEN FACTOR (BLF)

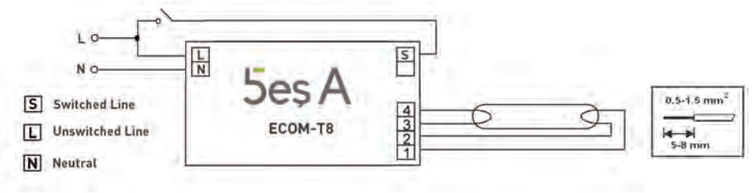
PRODUCT	15 W -T8	18 W -T8	30 W -T8	36 W -T8	58 W -T8
ECOM-T8	16%	15%	12%	11%	10%

BATTERY DATA

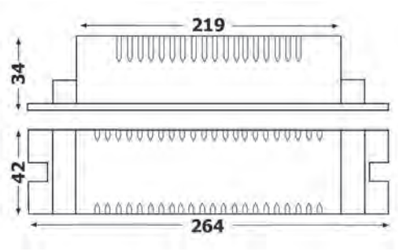
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
6 V	1800 mAh	SC	23	5	23x225x23	0,250
6 V	4000 mAh	D	35	5	35x310x35	0,650
6 V	5000 mAh	D	35	5	35x310x35	0,800

Please refer to “Battery Details Table” in “Emergency Lighting Unit Overview” section of the catalogue for further battery information.

WIRING DIAGRAM

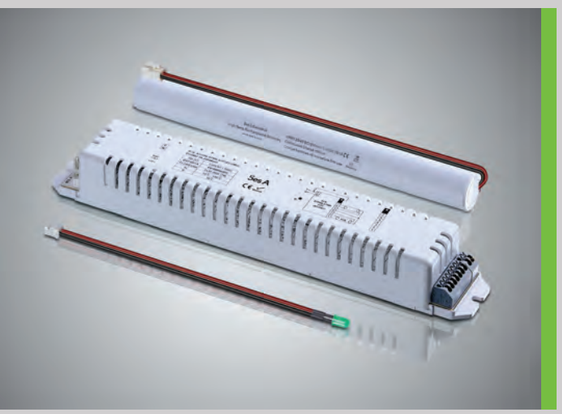


TECHNICAL DRAWING



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING UNIT
INTEGRATED - FLUORESCENT LAMP
(ECOM2-T8)



optional

- Integrated electronic ballast and emergency lighting unit in the same PCB
- Non-maintained operation
- Low rating current
- Silent and vibration-free lighting
- Lighting two lamps with one electronic ballast
- Easy assembly of luminary due to integrated design
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Emergency lighting function in case of low-voltage
- Compatible with 4-pin fluorescent lamps
- Prolonging the life of the lamp with warm-start
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Optional - test switch
- Optional - application of 110 V operating voltage
- Non-flammable ABS case
- Simple connectable terminal block

CE RoHS TL-D/4P

SELV | 230 VAC 50/60 Hz | EEI=A3 | IP 20 | -|ıı|- Ni-Cd | V0 ABS | CEM1 PCB | SMD | EN 61347-2-7 | EN 61347-2-3

In accordance with EN 61347-1, EN 61347-2-3 and EN 61347-2-7.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	EMERGENCY LUMEN FACTOR (BLF) :	> 10%
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	BALLAST LUMEN FACTOR :	> 75%
MAX. CASING TEMPERATURE (tc) :	70 °C	ENERGY EFFICIENCY INDEX :	EEI = A3
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II

PRODUCT LIST

PRODUCT CODE	RATED DURATION	LAMP POWER	LAMP TYPE	BALLAST POWER FACTOR	NUMBER OF EMERGENCY LAMP
ECOM2-T8-21518/1H	1 h	2x15 - 18 W	4-pin T8	0,70	Single Lamp
ECOM2-T8-21518/3H	3 h	2x15 - 18 W	4-pin T8	0,70	Single Lamp
ECOM2-T8-23036/1H	1 h	2x30 - 36 W	4-pin T8	0,70	Single Lamp
ECOM2-T8-23036/3H	3 h	2x30 - 36 W	4-pin T8	0,70	Single Lamp

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
ECOM2-T8-21518/1H	6V / 1800 mAh	35	0,225	42x264x34	0,326	30
ECOM2-T8-21518/3H	6V / 4000 mAh	36	0,230	42x264x34	0,331	30
ECOM2-T8-23036/1H	6V / 1800 mAh	54	0,350	42x264x34	0,331	30
ECOM2-T8-23036/3H	6V / 4000 mAh	55	0,355	42x264x34	0,333	30

* Measured with maximum power under 230 V mains.

EMERGENCY LUMEN FACTOR (BLF)

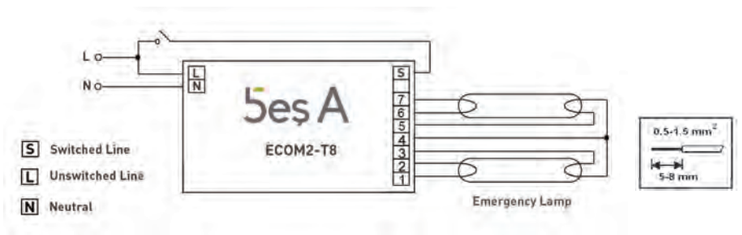
PRODUCT	15 W -T8	18 W -T8	30 W -T8	36 W -T8
ECOM2-T8	16%	15%	12%	11%

BATTERY DATA

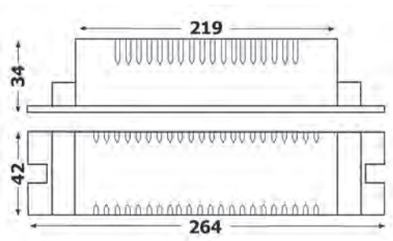
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
6 V	1800 mAh	SC	23	5	23x225x23	0,250
6 V	4000 mAh	D	35	5	35x310x35	0,650
7,2 V	2200 mAh	SC	35	6	23x270x23	0,360
7,2 V	6000 mAh	D	35	6	35x372x35	1,140

Please refer to “Battery Details Table” in “Emergency Lighting Unit Overview” section of the catalogue for further battery information.

WIRING DIAGRAM

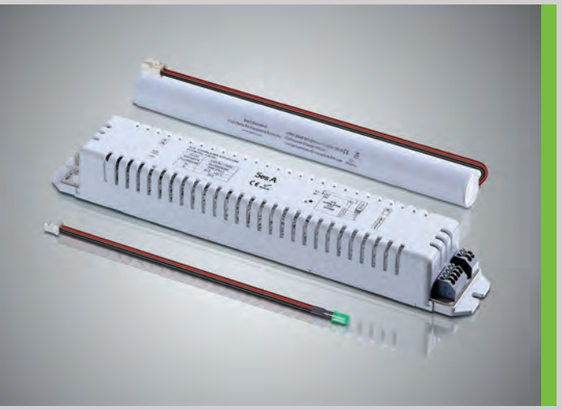


TECHNICAL DRAWING



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING UNIT
INTEGRATED - FLUORESCENT LAMP
(ECOM-PLL)



optional

- Integrated electronic ballast and emergency lighting Unit in the same PCB
- Non-maintained operation
- Low rating current
- Silent and vibration-free lighting
- Easy assembly of luminary due to integrated design
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Emergency lighting function in case of low-voltage
- Compatible with 4-pin fluorescent lamps
- Prolonging the life of the lamp with warm-start
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Optional - test switch
- Optional - application of 110 V operating voltage
- Non-flammable ABS case
- Simple connectable terminal block

CE RoHS PL-L / 4P

SELV | 230 VAC 50/60 Hz | EEI=A3 | IP 20 | -III- Ni-Cd | V0 ABS | CEM1 PCB | SMD | EN 61347-2-7 | EN 61347-2-3

In accordance with EN 61347-1, EN 61347-2-3, and EN 61347-2-7.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	EMERGENCY LUMEN FACTOR (BLF) :	> %10
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	BALLAST LUMEN FACTOR :	> 75%
MAX. CASING TEMPERATURE (tc) :	70 °C	ENERGY EFFICIENCY INDEX :	EEI = A3
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II

PRODUCT LIST

PRODUCT CODE	RATED DURATION	LAMP POWER	LAMP TYPE	BALLAST POWER FACTOR
ECOM-PLL-111/1H	1 h	1x11 W	4-pin PLL	0,70
ECOM-PLL-111/3H	3 h	1x11 W	4-pin PLL	0,70
ECOM-PLL-118/1H	1 h	1x18 W	4-pin PLL	0,70
ECOM-PLL-118/3H	3 h	1x18 W	4-pin PLL	0,70
ECOM-PLL-124/1H	1 h	1x24 W	4-pin PLL	0,70
ECOM-PLL-124/3H	3 h	1x24 W	4-pin PLL	0,70
ECOM-PLL-136/1H	1 h	1x36 W	4-pin PLL	0,70
ECOM-PLL-136/3H	3 h	1x36 W	4-pin PLL	0,70
ECOM-PLL-155/1H	1 h	1x55 W	4-pin PLL	0,70
ECOM-PLL-155/3H	3 h	1x55 W	4-pin PLL	0,70

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
ECOM-PLL-111/1H	6 V / 1800 mAh	15	0,095	42x264x34	0,295	30
ECOM-PLL-111/3H	6 V / 4000 mAh	16	0,100	42x264x34	0,295	30
ECOM-PLL-118/1H	6 V / 1800 mAh	16	0,100	42x264x34	0,330	30
ECOM-PLL-118/3H	6 V / 4000 mAh	17	0,105	42x264x34	0,330	30
ECOM-PLL-124/1H	6 V / 1800 mAh	23	0,155	42x264x34	0,330	30
ECOM-PLL-124/3H	6 V / 4000 mAh	24	0,160	42x264x34	0,330	30
ECOM-PLL-136/1H	6 V / 1800 mAh	29	0,195	42x264x34	0,311	30
ECOM-PLL-136/3H	6 V / 4000 mAh	30	0,200	42x264x34	0,311	30
ECOM-PLL-155/1H	6 V / 1800 mAh	38	0,235	42x264x34	0,307	30
ECOM-PLL-155/3H	6 V / 5000 mAh	39	0,240	42x264x34	0,307	30

* Measured with maximum power under 230 V mains.

EMERGENCY LUMEN FACTOR (BLF)

PRODUCT	11 W -PLL	18 W -PLL	24 W -PLL	36 W -PLL	55 W -PLL
ECOM-PLL	30%	17%	16%	13%	11%

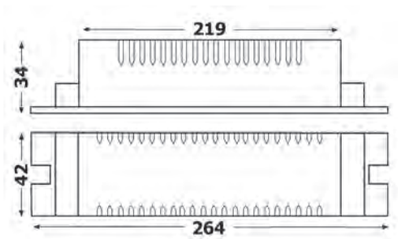
BATTERY DATA

VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
6 V	1800 mAh	SC	23	5	23x225x23	0,250
6 V	4000 mAh	D	35	5	35x310x35	0,650
6 V	5000 mAh	D	35	5	35x310x35	0,800

Please refer to "Battery Details Table" in "Emergency Lighting Unit Overview" section of the catalogue for further battery information.

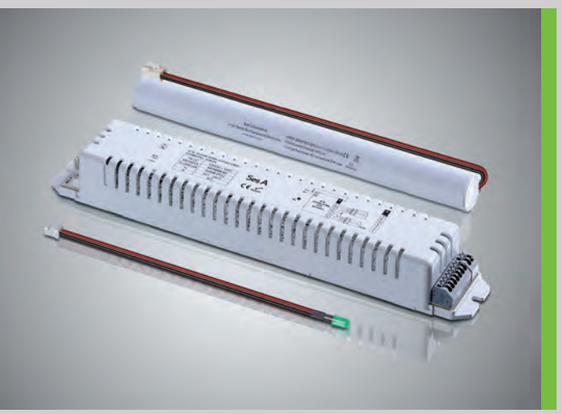
WIRING DIAGRAM

TECHNICAL DRAWING



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING UNIT
INTEGRATED - FLUORESCENT LAMP
(ECOM2-PLL)



- Integrated electronic ballast and emergency lighting unit in the same PCB
- Non-maintained operation
- Low rating current
- Silent and vibration-free lighting
- Easy assembly of luminary due to integrated design
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Emergency lighting function in case of low-voltage
- Compatible with 4-pin fluorescent lamps
- Prolonging the life of the lamp with warm-start
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Optional - test switch
- Optional - application of 110 V operating voltage
- Non-flammable ABS case
- Simple connectable terminal block

CE RoHS PL-L/4P

SELV | 230 VAC 50/60 Hz | EEI=A3 | IP 20 | -III- Ni-Cd | V0 ABS | CEM1 PCB | SMD | EN 61347-2-7 | EN 61347-2-3

In accordance with EN 61347-1, EN 61347-2-3, and EN 61347-2-7.

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
ECOM2-PLL-211/1H	6 V / 1800 mAh	26	0,175	42x264x34	0,327	30
ECOM2-PLL-211/3H	6 V / 4000 mAh	27	0,180	42x264x34	0,329	30
ECOM2-PLL-218/1H	6 V / 1800 mAh	26	0,175	42x264x34	0,327	30
ECOM2-PLL-218/3H	6 V / 4000 mAh	27	0,180	42x264x34	0,329	30
ECOM2-PLL-224/1H	6 V / 1800 mAh	41	0,265	42x264x34	0,328	30
ECOM2-PLL-224/3H	6 V / 4000 mAh	42	0,270	42x264x34	0,334	30
ECOM2-PLL-236/1H	6 V / 1800 mAh	56	0,360	42x264x34	0,327	30
ECOM2-PLL-236/3H	6 V / 4000 mAh	57	0,365	42x264x34	0,330	30

* Measured with maximum power under 230 V mains.

EMERGENCY LUMEN FACTOR (BLF)

PRODUCT	11 W -PLL	18 W -PLL	24 W -PLL	36 W -PLL
ECOM2-PLL	30%	17%	16%	13%

BATTERY DATA

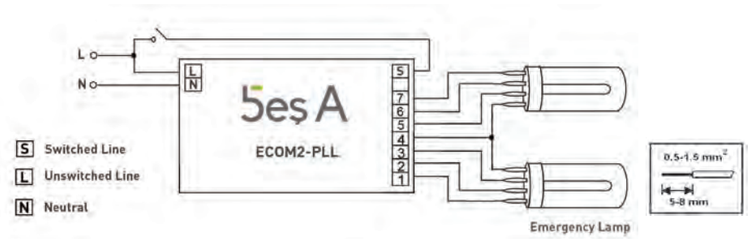
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
6 V	1800 mAh	SC	23	5	23x225x23	0,250
6 V	4000 mAh	D	35	5	35x310x35	0,650
7,2 V	2200 mAh	SC	23	6	23x270x23	0,360
7,2 V	6000 mAh	D	35	6	35x372x35	1,140

Please refer to “Battery Details Table” in “Emergency Lighting Unit Overview” section of the catalogue for further battery information.

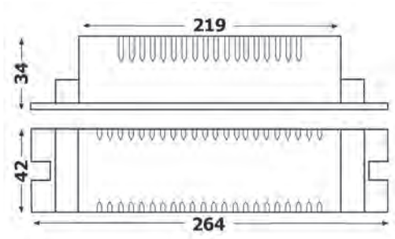
TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	EMERGENCY LUMEN FACTOR (BLF) :	> 10%
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	BALLAST LUMEN FACTOR :	> 75%
MAX. CASING TEMPERATURE (tc) :	70 °C	ENERGY EFFICIENCY INDEX :	EEI = A3
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II

WIRING DIAGRAM



TECHNICAL DRAWING

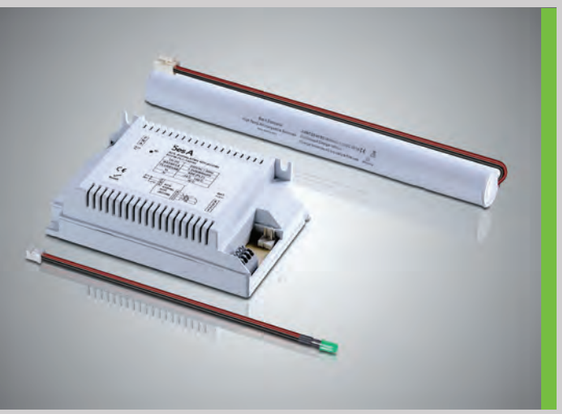


PRODUCT LIST

PRODUCT CODE	RATED DURATION	LAMP POWER	LAMP TYPE	BALLAST POWER FACTOR	NUMBER OF EMERGENCY LAMP
ECOM2-PLL-211/1H	1 h	2x11 W	4-pin PLL	0,70	Single Lamp
ECOM2-PLL-211/3H	3 h	2x11 W	4-pin PLL	0,70	Single Lamp
ECOM2-PLL-218/1H	1 h	2x18 W	4-pin PLL	0,70	Single Lamp
ECOM2-PLL-218/3H	3 h	2x18 W	4-pin PLL	0,70	Single Lamp
ECOM2-PLL-224/1H	1 h	2x24 W	4-pin PLL	0,70	Single Lamp
ECOM2-PLL-224/3H	3 h	2x24 W	4-pin PLL	0,70	Single Lamp
ECOM2-PLL-236/1H	1 h	2x36 W	4-pin PLL	0,70	Single Lamp
ECOM2-PLL-236/3H	3 h	2x36 W	4-pin PLL	0,70	Single Lamp

Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING UNIT
INTEGRATED - FLUORESCENT LAMP
(ECOM-PLC)



optional

- Integrated electronic ballast and emergency lighting Unit in the same PCB
- Non-maintained operation
- Low rating current
- Silent and vibration-free lighting
- Easy assembly of luminary due to integrated design
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Emergency lighting function in case of low-voltage
- Compatible with 4-pin fluorescent lamps
- Prolonging the life of the lamp with warm-start
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Optional - test switch
- Optional - application of 110 V operating voltage
- Non-flammable ABS case
- Simple connectable terminal block

CE RoHS PL-T/C/4P

SELV | 230 VAC 50/60 Hz | EEI=A3 | IP 20 | -|ıl|- Ni - Cd | V0 ABS | CEM1 PCB | SMD | EN 61347-2-7 | EN 61347-2-3

In accordance with EN 61347-1, EN 61347-2-3, and EN 61347-2-7.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	EMERGENCY LUMEN FACTOR (BLF) :	> 10%
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	BALLAST LUMEN FACTOR :	> 75%
MAX. CASING TEMPERATURE (tc) :	70 °C	ENERGY EFFICIENCY INDEX :	EEI = A3
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II

PRODUCT LIST

PRODUCT CODE	RATED DURATION	LAMP POWER	LAMP TYPE	BALLAST POWER FACTOR
ECOM-PLC-118/1H	1 h	1x18 W	4-pin PLC	0,70
ECOM-PLC-118/3H	3 h	1x18 W	4-pin PLC	0,70
ECOM-PLC-126/1H	1 h	1x26 W	4-pin PLC	0,70
ECOM-PLC-126/3H	3 h	1x26 W	4-pin PLC	0,70
ECOM-PLC-132/1H	1 h	1x32 W	4-pin PLC	0,70
ECOM-PLC-132/3H	3 h	1x32 W	4-pin PLC	0,70
ECOM-PLC-142/1H	1 h	1x42 W	4-pin PLC	0,70
ECOM-PLC-142/3H	3 h	1x42 W	4-pin PLC	0,70

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
ECOM-PLC-118/1H	6 V / 1800 mAh	18	0,120	78x123x36	0,305	25
ECOM-PLC-118/3H	6 V / 4000 mAh	19	0,125	78x123x36	0,305	25
ECOM-PLC-126/1H	6 V / 1800 mAh	24	0,160	78x123x36	0,305	25
ECOM-PLC-126/3H	6 V / 5000 mAh	25	0,170	78x123x36	0,305	25
ECOM-PLC-132/1H	6 V / 1800 mAh	29	0,185	78x123x36	0,305	25
ECOM-PLC-132/3H	6 V / 5000 mAh	30	0,190	78x123x36	0,305	25
ECOM-PLC-142/1H	7,2 V / 2200 mAh	38	0,220	78x123x36	0,305	25
ECOM-PLC-142/3H	7,2 V / 6000 mAh	41	0,260	78x123x36	0,305	25

* Measured with maximum power under 230 V mains.

EMERGENCY LUMEN FACTOR (BLF)

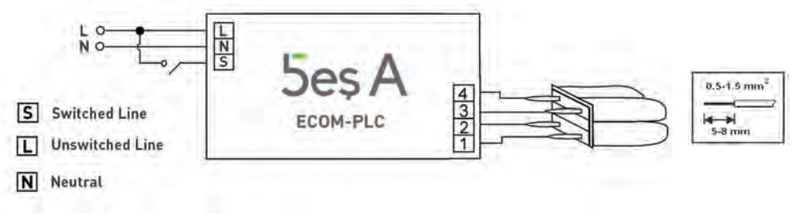
PRODUCT	10 W -PLC	13 W -PLC	18 W -PLC	26 W -PLC	32 W -PLC	42 W -PLC
ECOM-PLC	35%	30%	30%	22%	16%	15%

BATTERY DATA

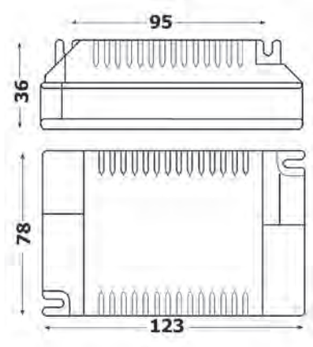
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
6 V	1800 mAh	SC	23	5	23x225x23	0,250
6 V	4000 mAh	D	35	5	35x310x35	0,650
6 V	5000 mAh	D	35	5	35x310x35	0,800
7,2 V	2200 mAh	SC	23	6	23x270x23	0,360
7,2 V	6000 mAh	D	35	6	35x372x35	1,140

Please refer to “Battery Details Table” in “Emergency Lighting Unit Overview” section of the catalogue for further battery information.

WIRING DIAGRAM

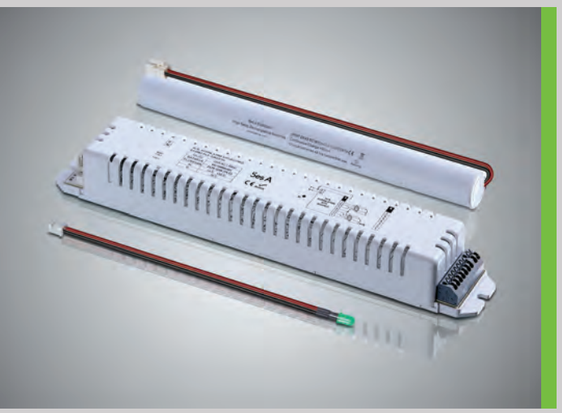


TECHNICAL DRAWING



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING UNIT
INTEGRATED - FLUORESCENT LAMP
(ECOM2-PLC)



optional

- Integrated electronic ballast and emergency lighting unit in the same PCB
- Non-maintained operation
- Low rating current
- Silent and vibration-free lighting
- Easy assembly of luminary due to integrated design
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Emergency lighting function in case of low-voltage
- Compatible with 4-pin fluorescent lamps
- Prolonging the life of the lamp with warm-start
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Optional - test switch
- Optional - application of 110 V operating voltage
- Non-flammable ABS case
- Simple connectable terminal block

PL-T/C/4P

SELV | 230 VAC 50/60 Hz | EEI=A3 | IP 20 | -|ıı|- Ni - Cd | V0 ABS | CEM1 PCB | SMD | EN 61347-2-7 | EN 61347-2-3

In accordance with EN 61347-1, EN 61347-2-3, and EN 61347-2-7.

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
ECOM2-PLC-21013/1H	6 V / 1800 mAh	28	0,180	42x264x34	0,328	30
ECOM2-PLC-21013/3H	6 V / 4000 mAh	29	0,185	42x264x34	0,331	30
ECOM2-PLC-218/1H	6 V / 1800 mAh	29	0,190	42x264x34	0,325	30
ECOM2-PLC-218/3H	6 V / 4000 mAh	30	0,195	42x264x34	0,329	30
ECOM2-PLC-226/1H	6 V / 1800 mAh	45	0,295	42x264x34	0,326	30
ECOM2-PLC-226/3H	6 V / 5000 mAh	46	0,300	42x264x34	0,331	30
ECOM2-PLC-232/1H	6 V / 1800 mAh	52	0,340	42x264x34	0,326	30
ECOM2-PLC-232/3H	6 V / 5000 mAh	53	0,345	42x264x34	0,330	30

* Measured with maximum power under 230 V mains.

EMERGENCY LUMEN FACTOR (BLF)

PRODUCT	10 W -PLC	13 W -PLC	18 W -PLC	26 W -PLC	32 W -PLC	42 W -PLC
ECOM2-PLC	35%	30%	30%	22%	16%	15%

BATTERY DATA

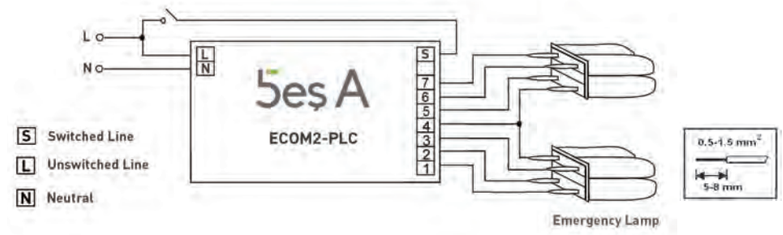
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
6 V	1800 mAh	SC	23	5	23x225x23	0,250
6 V	4000 mAh	D	35	5	35x310x35	0,650
6 V	5000 mAh	D	35	5	35x310x35	0,800
7,2 V	2200 mAh	SC	23	6	23x270x23	0,360
7,2 V	6000 mAh	D	35	6	35x372x35	1,140

Please refer to “Battery Details Table” in “Emergency Lighting Unit Overview” section of the catalogue for further battery information.

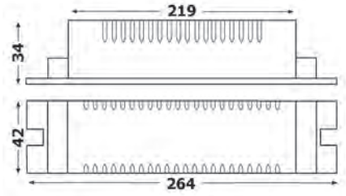
TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	EMERGENCY LUMEN FACTOR (BLF)	> 10%
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	BALLAST LUMEN FACTOR :	> 75%
MAX. CASING TEMPERATURE (tc) :	70 °C	ENERGY EFFICIENCY INDEX :	EEI = A3
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II

WIRING DIAGRAM



TECHNICAL DRAWING



PRODUCT LIST

PRODUCT CODE	RATED DURATION	LAMP POWER	LAMP TYPE	BALLAST POWER FACTOR	NUMBER OF EMERGENCY LAMP
ECOM2-PLC-21013/1H	1 h	2x10-13 W	4-pin PLC	0,70	Single Lamp
ECOM2-PLC-21013/3H	3 h	2x10-13 W	4-pin PLC	0,70	Single Lamp
ECOM2-PLC-218/1H	1 h	2x18 W	4-pin PLC	0,70	Single Lamp
ECOM2-PLC-218/3H	3 h	2x18 W	4-pin PLC	0,70	Single Lamp
ECOM2-PLC-226/1H	1 h	2x26 W	4-pin PLC	0,70	Single Lamp
ECOM2-PLC-226/3H	3 h	2x26 W	4-pin PLC	0,70	Single Lamp
ECOM2-PLC-232/1H	1 h	2x32 W	4-pin PLC	0,70	Single Lamp
ECOM2-PLC-232/3H	3 h	2x32 W	4-pin PLC	0,70	Single Lamp

Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING UNIT
HALOGEN LAMP
(EMLUS-HJ)

- Compatible with 12V halogen lamps
- Compatible with all dimmable and non-dimmable, constant current control gears
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Emergency lighting function in case of low-voltage
- Driving halogen lamp with costant voltage
- 30% Lighting
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Optional - test switch
- Optional - application of 110 V operating voltage
- Non-flammable ABS case
- Simple connectable terminal block

CE · RoHS · HALOGEN · SELV · 230 VAC 50/60 Hz · IP 20 · V0 ABS · CEM1 PCB · SMD · -|ıl|- Ni-Cd · EN 61347-2-7

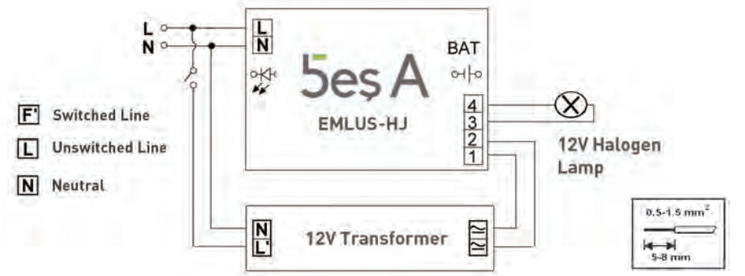
In accordance with EN 61347-1, EN 61347-2-7, and EN 60929.

BATTERY DATA

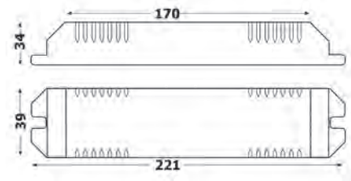
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
7,2 V	2200 mAh	SC	23	6	23x270x23	0,360
7,2 V	6000 mAh	D	35	6	35x372x35	1,140
7,2 V	12000 mAh	D	35	12	70x372x35	2,280

Please refer to “Battery Details Table” in “Emergency Lighting Unit Overview” section of the catalogue for further battery information.

WIRING DIAGRAM



TECHNICAL DRAWING



TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	BATTERY TYPE :	7,2 V Ni-Cd
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	EMERGENCY LUMEN FACTOR (BLF)	30%
MAX. CASING TEMPERATURE (tc) :	70 °C	MAX. OUTPUT POWER :	12 V - 50 W
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II

PRODUCT LIST

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W) *	MAINS CURRENT (A) *	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-HJ-12V20W/1H	7,2 V / 2200 mAh (1 h)	3,3	0,022	39x221x34	0,250	30
EMLUS-HJ-12V20W/3H	7,2 V / 6000 mAh (3 h)	5,8	0,032	39x221x34	0,250	30
EMLUS-HJ-12V50W/1H	7,2 V / 6000 mAh (1 h)	6,0	0,032	39x221x34	0,250	30
EMLUS-HJ-12V50W/3H	7,2 V / 12000 mAh (3 h)	6,1	0,033	39x221x34	0,250	30

* Measured under 230 V mains.

Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING UNIT
HALOGEN LAMP
(EMLUS-1250)

optional

- Compatible with 12V halogen lamps
- Compatible with all dimmable and non-dimmable, constant current control gears
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Emergency lighting function in case of low-voltage
- Short-circuit, open-circuit and overload protection
- Seal lead-acid battery
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Optional - test switch
- Optional - application of 110 V operating voltage
- Non-flammable ABS case
- Simple connectable terminal block

CE · RoHS · HALOGEN · SELV · 230 VAC 50/60 Hz · IP 20 · V0 ABS · CEM1 PCB · SMD · -|ıl|- Ni-Cd · EN 61347-2-7

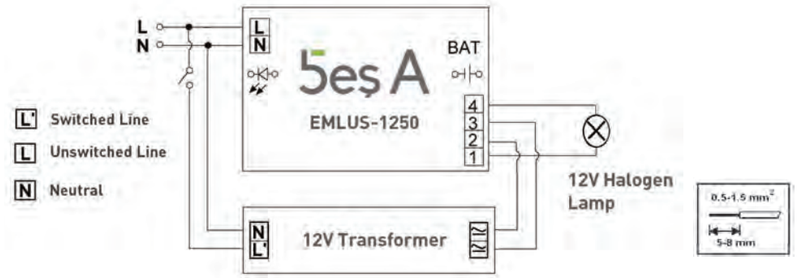
In accordance with EN 61347-1, EN 61347-2-7, and EN 60929.

BATTERY DATA

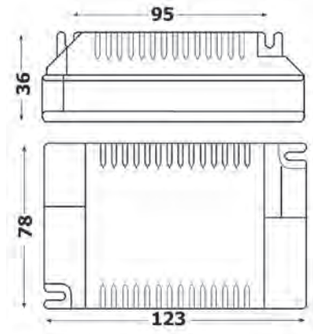
VOLTAGE	CAPACITY	DIMENSIONS (mm)	WEIGHT (kg)
12 V	7200 mAh	65x150x95	2,200

* Seal lead-acid battery is used.

WIRING DIAGRAM



TECHNICAL DRAWING



TECHNICAL DATA

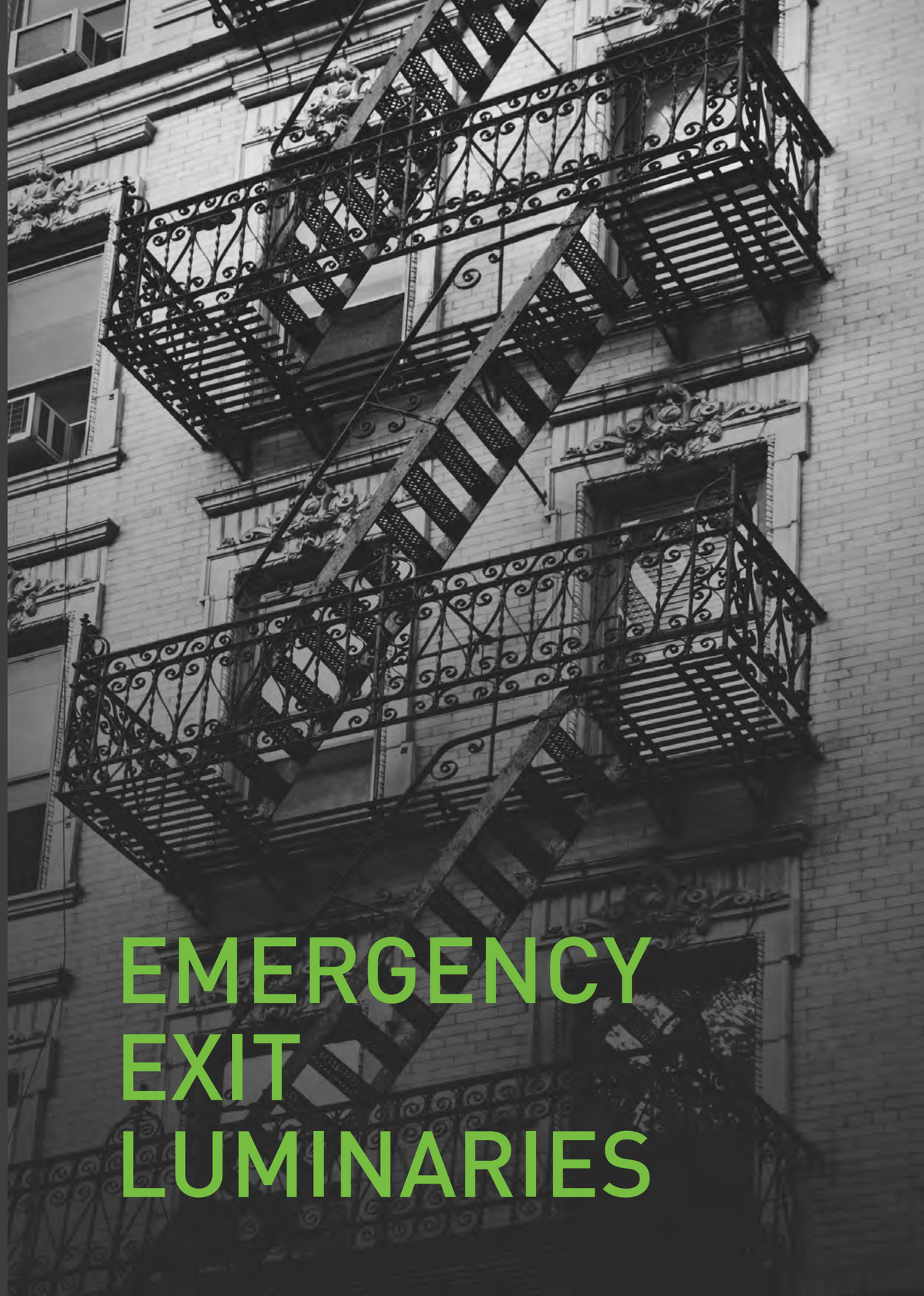
SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	BATTERY TYPE :	12 V Lead-Acid
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	EMERGENCY LUMEN FACTOR (BLF) :	100%
MAX. CASING TEMPERATURE (tc) :	70 °C	MAX. OUTPUT POWER :	12 V - 50 W
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II

PRODUCT LIST

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W) *	MAINS CURRENT (A) *	CASE DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-1250/1H	12 V / 7200 mAh (1 h)	7,2	0,035	78x123x36	0,285	25
EMLUS-1250/3H	2*12 V / 7200 mAh (2,5 h)	7,2	0,035	78x123x36	0,285	25

* Measured under 230 V mains.

Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.



EMERGENCY EXIT LUMINARIES

EMERGENCY EXIT LUMINARIES

OVERVIEW

EMERGENCY EXIT LUMINARIES

For the people to reach the exits easily during emergencies, emergency exits luminaries should be installed in buildings. It is compulsory to install emergency exit signs in order to show people in the building the locations of the exits to be used for evacuation and the planned exit routes from every point in the building in the case of an emergency.

These luminaries, which can be one-sided or two-sided, have graphic signs on them that provide orientation. The luminaries can be installed on the wall, on the ceiling or on the suspended ceiling. They can also be hanged down by using components such as hangers, chains and slings.

OPERATION TYPES OF EMERGENCY EXIT LUMINARIES

Non-Maintained Model

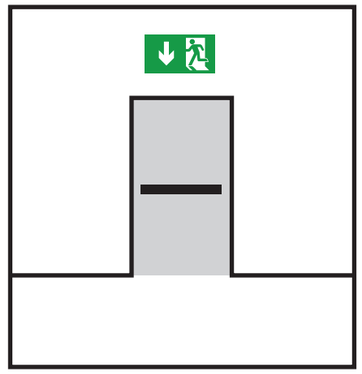
The lamp does not provide light when the main power is at its normal value. In the case of a main power failure or a main power interruption, the lamp starts to provide light by means of the battery and the electronic circuit located inside the luminary.

Maintained Model

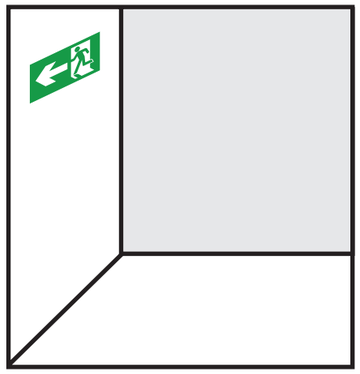
The lamp provides light when the mains voltage is at its normal value. In the case of a power failure or a power interruption, the lamp continues to provide light by means of the battery and the electronic circuit located inside the luminary.

THE INSTALLATION OF THE EMERGENCY EXIT LUMINARIES

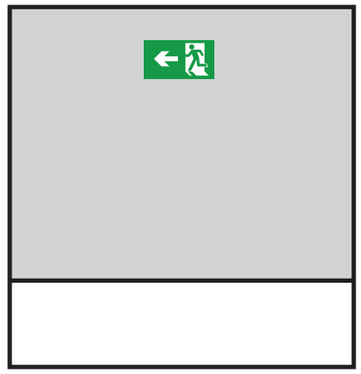
The details on the installation of the emergency exit luminaries are explained in EN 50172 and EN 1838 standards.



At all exits to be used in the case of an emergency



All points that dictate a change in direction

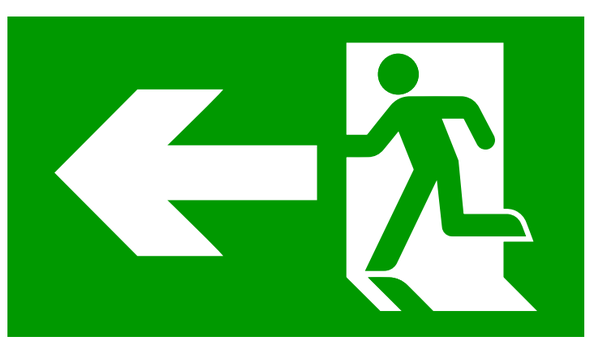


Throughout the corridor

THE SIGN (PICTOGRAM) FORMATS OF THE EMERGENCY EXIT LUMINARIES

It is very important that the escape route is marked clearly in order to provide a quick and safe evacuation in areas and buildings. The effect of an exit sign depends on the size, the color, the position and the high visibility of the sign. The European standards approve and support the use of pictograms that use white drawings on a green background.

The lighting level ratios of green and white colors with respect to each other are defined in EN 1838 standards. The color rendering index of the lamp must be at least 40 for the safety sign colors to be perceived. On the escape route, apart from the exit signs, there must not be any illuminated signs or objects that may cause hesitation or confusion regarding the escape direction.



- Minimum lighting intensity = 2cd/m²
- The lighting intensity ratio between the most and the least illuminated parts of the areas with the same color must not be greater that 10:1.
- The lighting intensity ratio between the white and green area must not be less than 5:1 and more than 15:1.
- The green background should constitute at least 50% of the area of the sign.

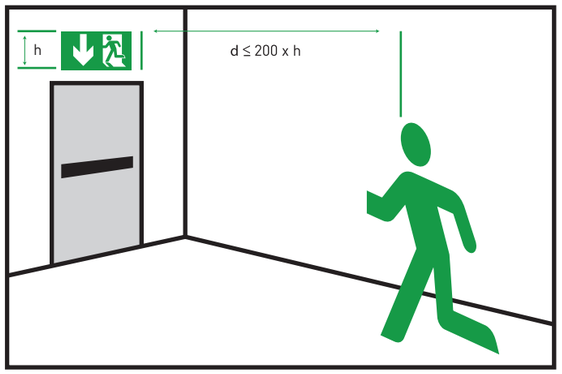
THE MAXIMUM VIEWING DISTANCE OF THE EMERGENCY EXIT LUMINARIES

It is very important to assure that the signs that show the escape routes are visible from everywhere. For this purpose, EN 1838 standard states that the maximum viewing distance should be determined in accordance with the height of the pictogram. The standard provides the formula below:

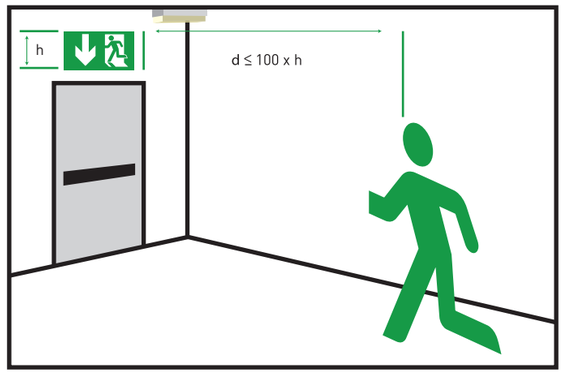
d = s x h

d: Maximum viewing distance
h: Pictogram's height
s= 100, for signs illuminated from outside
s= 200, for signs illuminated from within

For example, for an emergency exit luminary located at the end of a 20 meter corridor the height of the sign (pictogram) must be at least 10 cm if it is illuminated from within and at least 20 cm if it is illuminated from outside.



For the sings illuminated from within it has to be 200 times of the height of the sign



For the sings illuminated from outside it has to be 100 times of the height of the sign

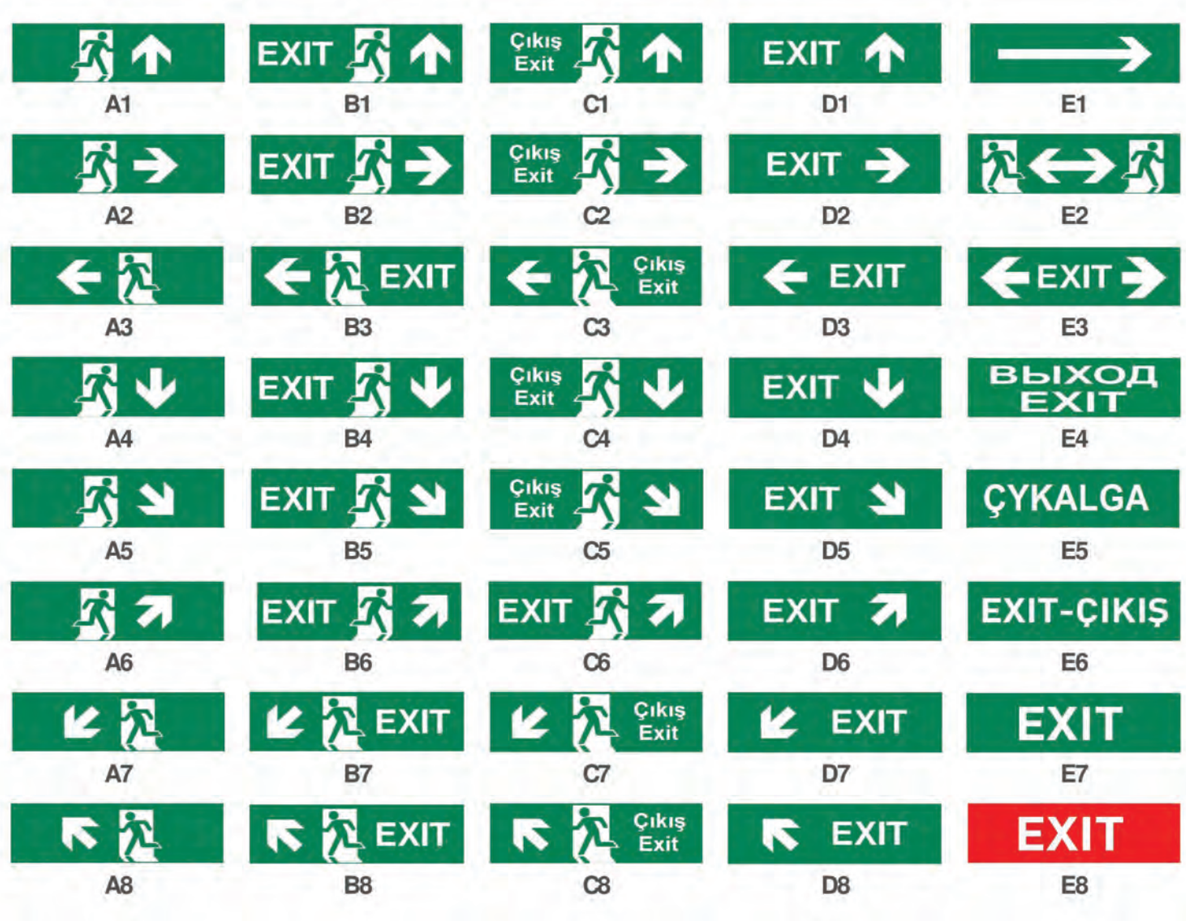
LIGHTING DURATION OF THE EMERGENCY EXIT LUMINARIES

Emergency lighting must be provided for at least 60 minutes in the case of an interruption in the normal lighting. In the buildings with a occupants load of 200 or more, emergency lighting must be provided for at least 120 minutes.

PICTOGRAM ALTERNATIVES FOR EMERGENCY EXIT LUMINARIES

The details regarding the icons that are used in the emergency exit luminaries are listed in the standards EN ISO 7010, ISO 3864-1 and ISO 16069.

Pictogram Table



EMERGENCY EXIT LUMINARIES

PRODUCTS

EMERGENCY EXIT LUMINARY - LED

TUNA S (BYAL08)

Double Sided
Anodized aluminum case
Non-flammable ABS side cover and hanger
SMD LED application
Charge and battery capacity status display with green LEDs
Test switch
High-temperature Ni-Cd battery cells
Overcharge and deep discharge protection
Transparent Plexiglas with screen printed
Side lighting
Ceiling mounted, ceiling recessed or wall mounted
Optional - application of 110 V operating voltage
Optional - metal hanger or hook

Please refer to "Pictogram Table" in "Emergency Exit Luminaries Overview" section of the catalogue for alternatives.

CE RoHS bsi. LED OSRAM LED Technology included IECEE

SELV | 230 VAC 50/60 Hz | IP 20 | 41 ALU | V0 ABS | CEM1 PCB | SMD | -|||- Ni-Cd | EN 60598-2-22

In accordance with EN 60598-1, EN 60598-2-22 standards.

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE *	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYAL-S08-CY/SU	3 h	Maintained	6 x 0,1W LED	Double-sided	Surface Mounted - Plastic Hanger
BYAL-S08-CY/MT	3 h	Maintained	6 x 0,1W LED	Double-sided	Surface Mounted - Metal Hanger
BYAL-S08-CY/SA	3 h	Maintained	6 x 0,1W LED	Double-sided	Recessed Mounted

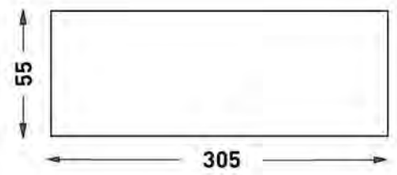
* Maintained: Lights on mains and stays alight in case of the mains failure.

MAINS DATA

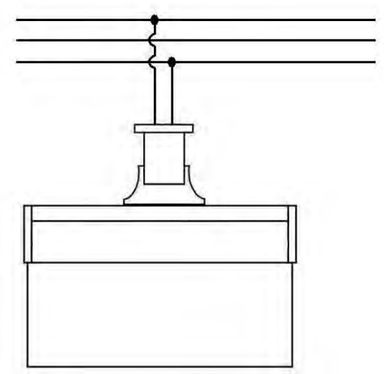
PRODUCT CODE	RATED POWER (W) *	MAINS CURRENT (A) *	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYAL-S08-CY/SU	3,5	0,020	40 x 244 x 185	0,645	1
BYAL-S08-CY/MT	3,5	0,020	40 x 244 x 185	0,725	1
BYAL-S08-CY/SA	3,5	0,020	102 x 312 x 185	1,205	1

* Measured under 230 V mains.

RECESSED MOUNTING HOLE SIZE



WIRING DIAGRAM



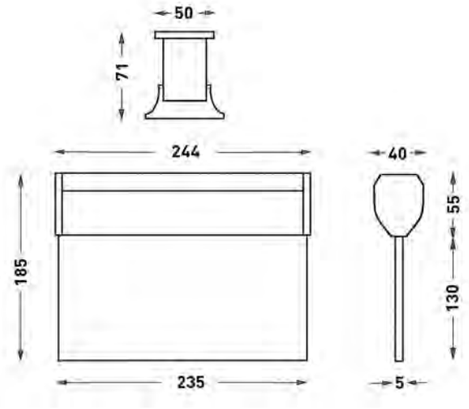
TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	SIGN DIMENSIONS :	130x235 mm
AMBIENT TEMPERATURE (ta) :	-10 °C ... +40 °C	VIEWING DISTANCE :	26 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	I
BATTERY TYPE :	3,6 V NiCd		

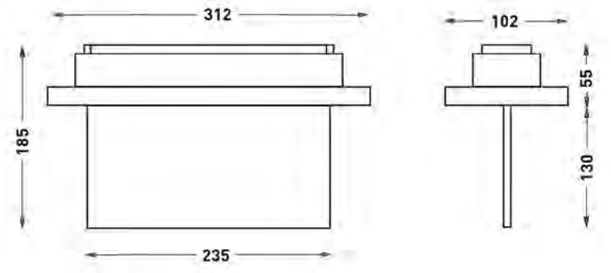
CONTROL PANEL

- **CHARGE** : Charge Status Display LED . Indicates charging process of the battery
- **TEST :** Test Button. Enables testing the product without mains cuts
- **FULL :** Battery Status Display LED. Indicates the occupancy level of the battery

TECHNICAL DRAWING / SURFACE MOUNTED



TECHNICAL DRAWING / RECESSED MOUNTED



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY EXIT LUMINARY - LED

TUNA M (BYAL08)

Double Sided
Anodized aluminum case
Non-flammable ABS side cover and hanger
SMD LED application
Charge and battery capacity status display with green LEDs
Test switch
High-temperature Ni-Cd battery cells
Overcharge and deep discharge protection
Transparent Plexiglas with screen printed
Side lighting
Ceiling mounted, ceiling recessed or wall mounted
Optional - application of 110 V operating voltage
Optional - metal hanger or hook

Please refer to "Pictogram Table" in "Emergency Exit Luminaries Overview" section of the catalogue for alternatives.

CE RoHS bsi. LED OSRAM LED Technology included IECEE

SELV | 230 VAC 50/60 Hz | IP 20 | 41 ALU | V0 ABS | CEM1 PCB | SMD | -III- Ni-Cd | EN 60598-2-22

In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	SIGN DIMENSIONS :	140x265 mm
AMBIENT TEMPERATURE (ta) :	-10 °C ... +40 °C	VIEWING DISTANCE :	28 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	I
BATTERY TYPE :	3,6 V NiCd		

CONTROL PANEL

- **CHARGE** : Charge Status Display LED . Indicates charging process of the battery
- **TEST :** Test Button. Enables testing the product without mains cuts
- **FULL :** Battery Status Display LED. Indicates the occupancy level of the battery

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE *	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYAL-M08-CY/SU	3 h	Maintained	8 x 0,1W LED	Double-sided	Surface Mounted - Plastic Hanger
BYAL-M08-CY/MT	3 h	Maintained	8 x 0,1W LED	Double-sided	Surface Mounted - Metal Hanger
BYAL-M08-CY/SA	3 h	Maintained	8 x 0,1W LED	Double-sided	Recessed Mounted

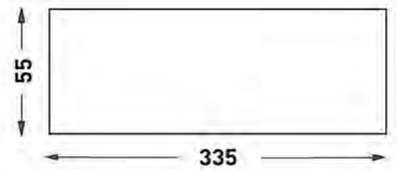
* Maintained: Lights on mains and stays alight in case of the mains failure.

MAINS DATA

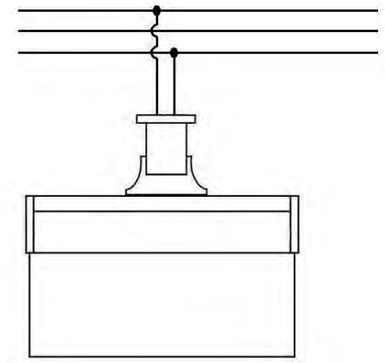
PRODUCT CODE	RATED POWER (W) *	MAINS CURRENT (A) *	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYAL-M08-CY/SU	3,5	0,020	40 x 274 x 195	0,665	1
BYAL-M08-CY/MT	3,5	0,020	40 x 274 x 195	0,745	1
BYAL-M08-CY/SA	3,5	0,020	102 x 342 x 195	1,220	1

* Measured under 230 V mains.

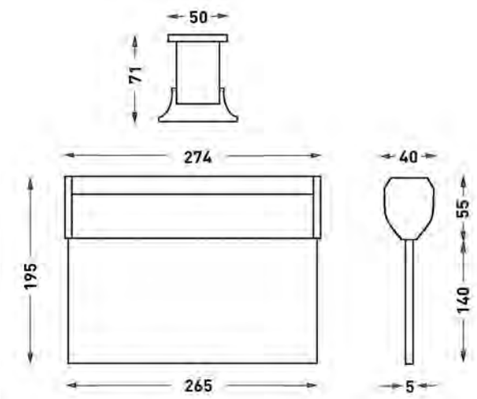
RECESSED MOUNTING HOLE SIZE



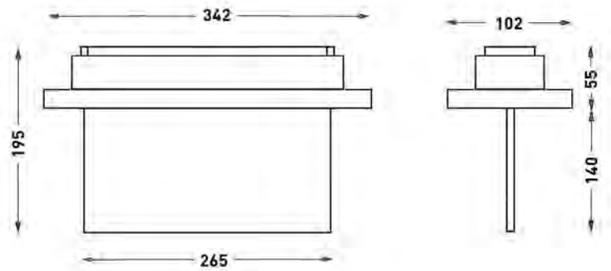
WIRING DIAGRAM



TECHNICAL DRAWING / SURFACE MOUNTED



TECHNICAL DRAWING / RECESSED MOUNTED



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY EXIT LUMINARY - LED

CUPRA (BYAL05)

Double Sided
Anodized aluminum case
Non-flammable ABS side cover and hanger
SMD LED application
Charge and battery capacity status display with green LEDs
Test switch
High-temperature Ni-Cd battery cells
Overcharge and deep discharge protection
Transparent Plexiglas with screen printed or laser engraved
Side lighting
Ceiling mounted, ceiling recessed or wall mounted
Optional - application of 110 V operating voltage
Optional - metal hanger or hook

Please refer to "Pictogram Table" in "Emergency Exit Luminaries Overview" section of the catalogue for alternatives.

CE RoHS TSE LED OSRAM LED Technology included

SELV | 230 VAC 50/60 Hz | IP 20 | 41 ALU | V0 ABS | CEM1 PCB | SMD | -|ıl|- Ni-Cd | EN 60598-2-22

In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	SIGN DIMENSIONS :	130 x 235 mm
AMBIENT TEMPERATURE (ta) :	-10 °C ... +40 °C	VIEWING DISTANCE :	26 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	I
BATTERY TYPE :	3,6 V NiCd		

CONTROL PANEL

- **CHARGE** : Charge Status Display LED . Indicates charging process of the battery
- **TEST :** Test Button. Enables testing the product without mains cuts
- **FULL :** Battery Status Display LED. Indicates the occupancy level of the battery

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE *	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYAL05-TY/SU	3 h	Maintained	4 x 0,1W LED	Single-sided	Surface Mounted - Plastic Hanger
BYAL05-TY/MT	3 h	Maintained	4 x 0,1W LED	Single-sided	Surface Mounted - Metal Hanger
BYAL05-TY/SA	3 h	Maintained	4 x 0,1W LED	Single-sided	Recessed Mounted

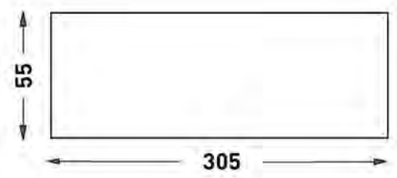
* Maintained: Lights on mains and stays alight in case of the mains failure.

MAINS DATA

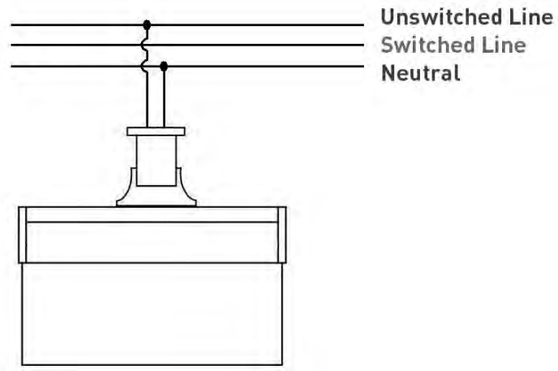
PRODUCT CODE	RATED POWER (W) *	MAINS CURRENT (A) *	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYAL05-TY/SU	2,5	0,014	38x245x187	0,525	1
BYAL05-TY/MT	2,5	0,014	38x245x187	0,605	1
BYAL05-TY/SA	2,5	0,014	102x312x187	0,910	1

* Measured under 230 V mains.

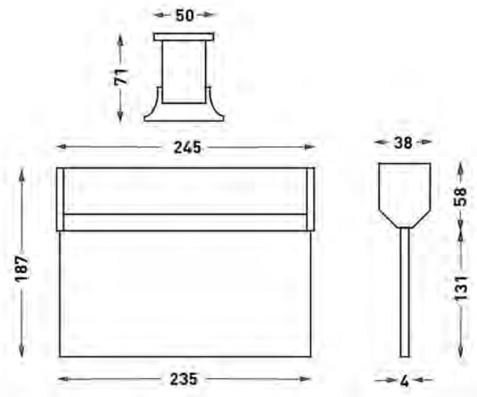
RECESSED MOUNTING HOLE SIZE



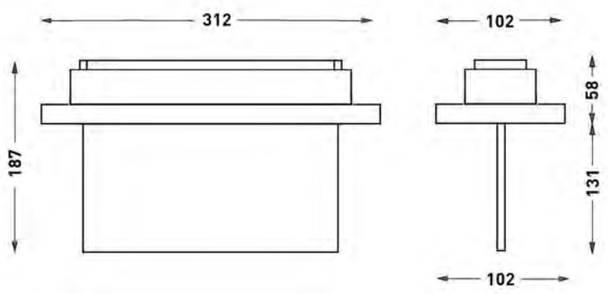
WIRING DIAGRAM



TECHNICAL DRAWING / SURFACE MOUNTED



TECHNICAL DRAWING / RECESSED MOUNTED



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY EXIT LUMINARY - LED

PINA (BYAL03)

- Single- or double-sided
- Anodized aluminum case
- Non-flammable ABS side cover and hanger
- SMD LED application
- Charge and battery capacity status display with green LEDs
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Transparent Plexiglas with screen printed or laser engraved
- Side lighting
- Ceiling mounted, ceiling recessed or wall mounted
- Optional - application of 110 V operating voltage
- Optional - metal hanger or hook

Please refer to "Pictogram Table" in "Emergency Exit Luminaries Overview" section of the catalogue for alternatives.

CE RoHS TSE LED OSRAM LED Technology included

SELV | 230 VAC 50/60 Hz | IP 20 | 41 ALU | V0 ABS | CEM1 PCB | SMD | -|ıl|- Ni-Cd | EN 60598-2-22

In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	SIGN DIMENSIONS :	145 x 265 mm
AMBIENT TEMPERATURE (ta) :	-10 °C ... +40 °C	VIEWING DISTANCE :	29 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	I
BATTERY TYPE :	3,6 V NiCd		

CONTROL PANEL

- **CHARGE** : Charge Status Display LED . Indicates charging process of the battery
- **TEST :** Test Button. Enables testing the product without mains cuts
- **FULL :** Battery Status Display LED. Indicates the occupancy level of the battery

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE *	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYAL03Y-CY/SU	3 h	Maintained	6 X 0,1W LED	Double-sided	Surface Mounted - Plastic Hanger
BYAL03Y-CY/MT	3 h	Maintained	6 X 0,1W LED	Double-sided	Surface Mounted - Metal Hanger
BYAL03Y-CY/SA	3 h	Maintained	6 X 0,1W LED	Double-sided	Recessed Mounted
BYAL03Y-TY/SU	3 h	Maintained	6 X 0,1W LED	Single-sided	Surface Mounted - Plastic Hanger
BYAL03Y-TY/MT	3 h	Maintained	6 X 0,1W LED	Single-sided	Surface Mounted - Metal Hanger
BYAL03Y-TY/SA	3 h	Maintained	6 X 0,1W LED	Single-sided	Recessed Mounted

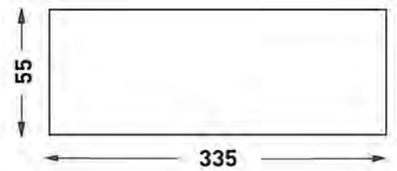
* Maintained: Lights on mains and stays alight in case of the mains failure.

MAINS DATA

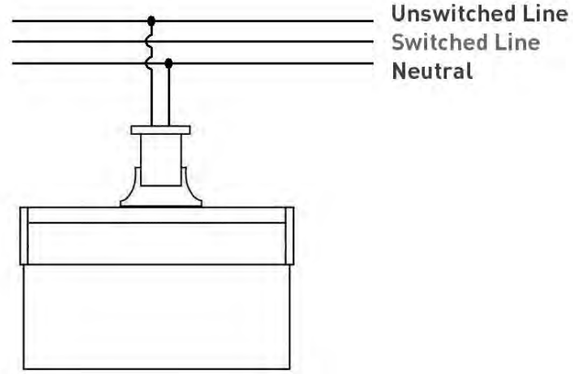
PRODUCT CODE	RATED POWER (W) *	MAINS CURRENT (A) *	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYAL03Y-CY/SU	2,8	0,016	42x276x203	0,635	1
BYAL03Y-CY/MT	2,8	0,016	42x276x203	0,715	1
BYAL03Y-CY/SA	2,8	0,016	102x342x203	1,045	1
BYAL03Y-TY/SU	2,8	0,016	42x276x203	0,605	1
BYAL03Y-TY/MT	2,8	0,016	42x276x203	0,685	1
BYAL03Y-TY/SA	2,8	0,016	102x342x203	1,015	1

* Measured under 230 V mains.

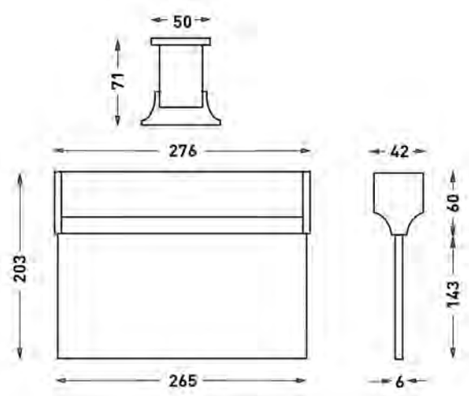
RECESSED MOUNTING HOLE SIZE



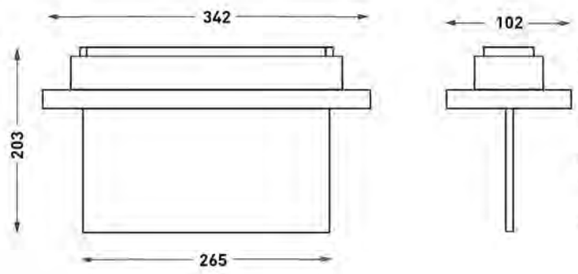
WIRING DIAGRAM



TECHNICAL DRAWING / SURFACE MOUNTED



TECHNICAL DRAWING / RECESSED MOUNTED



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY EXIT LUMINARY - LED

LAPIN LED (BYAL06)
LIPSOS LED (BYAL07)

- Single- or double-sided
- Anodized aluminum case
- Non-flammable ABS edge and plastic hanger
- SMD LED application
- Charge and battery capacity status display with green LEDs
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- White acrylic plate
- Back lighting
- Ceiling mounted, ceiling recessed or wall mounted
- Optional - application of 110 V operating voltage
- Optional - metal hanger or hook

Please refer to "Pictogram Table" in "Emergency Exit Luminaries Overview" section of the catalogue for alternatives.

CE RoHS TSE LED OSRAM LED Technology included

SELV | 230 VAC 50/60 Hz | IP 20 | 41 ALU | V0 ABS | CEM1 PCB | SMD | -|ıl|- Ni-Cd | EN 60598-2-22

In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	SIGN DIMENSIONS :	140 x 335 mm
AMBIENT TEMPERATURE (ta) :	-10 °C ... +40 °C	VIEWING DISTANCE :	28 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	I
BATTERY TYPE :	3,6 V NiCd		

CONTROL PANEL

- **CHARGE** : Charge Status Display LED . Indicates charging process of the battery
- **TEST :** Test Button. Enables testing the product without mains cuts
- **FULL :** Battery Status Display LED. Indicates the occupancy level of the battery

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE *	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYAL06-A/LED	3 h	Non- Maintained	7 x 0,35 W LED	Double-sided (Lapin)	Surface Mounted - Plastic Hanger
BYAL06-A/LED/MT	3 h	Non- Maintained	7 x 0,35 W LED	Double-sided (Lapin)	Surface Mounted - Metal Hanger
BYAL06-A/LED/SA	3 h	Non- Maintained	7 x 0,35 W LED	Double-sided (Lapin)	Recessed Mounted
BYAL06-S/LED	3 h	Maintained	7 x 0,35 W LED	Double-sided (Lapin)	Surface Mounted - Plastic Hanger
BYAL06-S/LED/MT	3 h	Maintained	7 x 0,35 W LED	Double-sided (Lapin)	Surface Mounted - Metal Hanger
BYAL06-S/LED/SA	3 h	Maintained	7 x 0,35 W LED	Double-sided (Lapin)	Recessed Mounted
BYAL07-A/LED	3 h	Non- Maintained	7 x 0,35 W LED	Single-sided (Lipsos)	Surface Mounted - Plastic Hanger
BYAL07-A/LED/MT	3 h	Non- Maintained	7 x 0,35 W LED	Single-sided (Lipsos)	Surface Mounted - Metal Hanger
BYAL07-A/LED/SA	3 h	Non- Maintained	7 x 0,35 W LED	Single-sided (Lipsos)	Recessed Mounted
BYAL07-S/LED	3 h	Maintained	7 x 0,35 W LED	Single-sided (Lipsos)	Surface Mounted - Plastic Hanger
BYAL07-S/LED/MT	3 h	Maintained	7 x 0,35 W LED	Single-sided (Lipsos)	Surface Mounted - Metal Hanger
BYAL07-S/LED/SA	3 h	Maintained	7 x 0,35 W LED	Single-sided (Lipsos))	Recessed Mounted

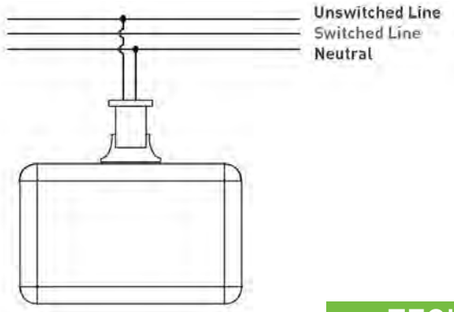
* Maintained: Lights on mains and stays alight in case of the mains failure.
* Non-Maintained: Lights in case of the mains failure.

MAINS DATA

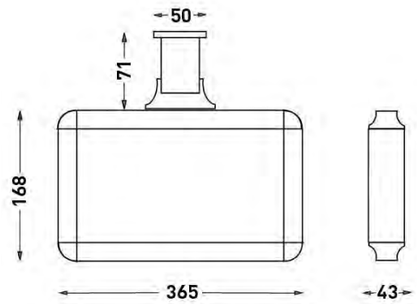
PRODUCT CODE	RATED POWER (W) *	MAINS CURRENT (A) *	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYAL06-A/LED	1,5	0,010	365x43x168	0,770	1
BYAL06-A/LED/MT	1,5	0,010	365x43x168	0,850	1
BYAL06-A/LED/SA	1,5	0,010	425x43x186	0,900	1
BYAL06-S/LED	5,0	0,030	365x43x168	0,770	1
BYAL06-S/LED/MT	5,0	0,030	365x43x168	0,850	1
BYAL06-S/LED/SA	5,0	0,030	425x43x186	0,900	1
BYAL07-A/LED	1,5	0,010	365x43x168	0,915	1
BYAL07-A/LED/MT	1,5	0,010	365x43x168	0,995	1
BYAL07-A/LED/SA	1,5	0,010	425x43x186	1,045	1
BYAL07-S/LED	5,0	0,030	365x43x168	0,915	1
BYAL07-S/LED/MT	5,0	0,030	365x43x168	0,995	1
BYAL07-S/LED/SA	5,0	0,030	425x43x186	1,045	1

* Measured under 230 V mains.

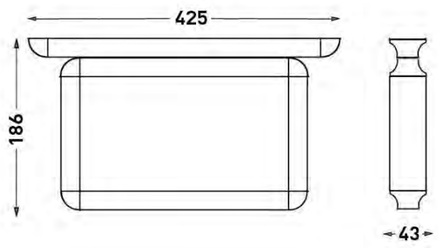
WIRING DIAGRAM



TECHNICAL DRAWING / SURFACE MOUNTED



TECHNICAL DRAWING / RECESSED MOUNTED



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY EXIT LUMINARY - LED

LAPIN XL LED (BYAL-XL06)
LIPSOS XL LED (BYAL-XL07)

- Single- or double-sided
- Anodized aluminum case
- Non-flammable ABS edge and plastic hanger
- SMD LED application
- Charge and battery capacity status display with green LEDs
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- White acrylic plate
- Back lighting
- Ceiling mounted or wall mounted
- Optional - application of 110 V operating voltage
- Optional - metal hanger or hook

Please refer to "Pictogram Table" in "Emergency Exit Luminaries Overview" section of the catalogue for alternatives.

CE RoHS LED OSRAM LED Technology included

SELV | 230 VAC 50/60 Hz | IP 20 | 41 ALU | V0 ABS | CEM1 PCB | SMD | -|||- Ni-Cd | EN 60598-2-22

In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	SIGN DIMENSIONS :	400 x 600 mm
AMBIENT TEMPERATURE (ta) :	-10 °C ... +40 °C	VIEWING DISTANCE :	80 m
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	I
BATTERY TYPE :	3,6 V NiCd		

CONTROL PANEL

- **CHARGE** : Charge Status Display LED . Indicates charging process of the battery
- **TEST :** Test Button. Enables testing the product without mains cuts
- **FULL :** Battery Status Display LED. Indicates the occupancy level of the battery

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYAL-XL06-LED-A	1 / 3 h	Non- Maintained	14 x 0,35 W LED	Double-sided (Lapin)	Surface Mounted - Hook Hanger
BYAL-XL06-LED-S	1 / 3 h	Maintained	14 x 0,35 W LED	Double-sided (Lapin)	Surface Mounted - Hook Hanger
BYAL-XL07-LED-A	1 / 3 h	Non- Maintained	14 x 0,35 W LED	Single-sided (Lipsos)	Wall Mounted
BYAL-XL07-LED-S	1 / 3 h	Maintained	14 x 0,35 W LED	Single-sided (Lipsos)	Wall Mounted

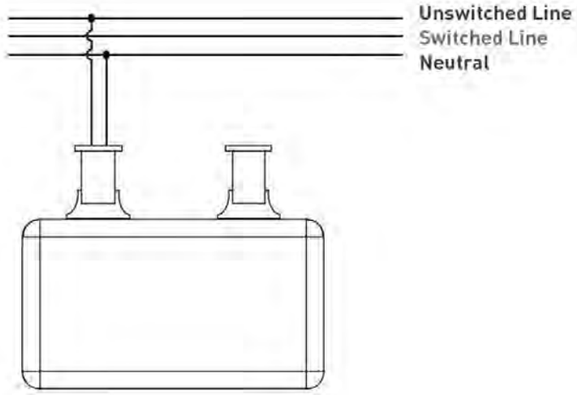
* Maintained: Lights on mains and stays alight in case of the mains failure.
* Non-Maintained: Lights in case of the mains failure.

MAINS DATA

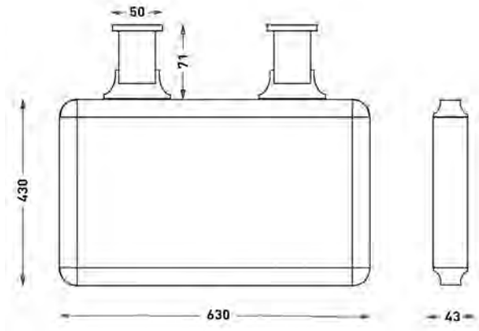
PRODUCT CODE	RATED POWER (W) *	MAINS CURRENT (A) *	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYAL-XL06-LED-A/1H	1,7	0,010	630x43x430	2,215	1
BYAL-XL06-LED-A/3H	2,2	0,015	630x43x430	2,370	1
BYAL-XL06-LED-S/1H	5,7	0,040	630x43x430	2,245	1
BYAL-XL06-LED-S/3H	6,2	0,045	630x43x430	2,400	1
BYAL-XL07-LED-A/1H	1,7	0,010	630x43x430	2,215	1
BYAL-XL07-LED-A/3H	2,2	0,015	630x43x430	2,370	1
BYAL-XL07-LED-S/1H	5,7	0,040	630x43x430	2,245	1
BYAL-XL07-LED-S/3H	6,2	0,045	630x43x430	2,400	1

* Measured under 230 V mains.

WIRING DIAGRAM



TECHNICAL DRAWING



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY EXIT LUMINARY - LED

MERCAN LED (BYAL04)

Single or double-sided
Anodized aluminum case
Non-flammable ABS side cover and hanger
SMD LED application
Charge and battery capacity status display with green LEDs
Test switch
High-temperature Ni-Cd battery cells
Overcharge and deep discharge protection
White acrylic plate
Back lighting
Ceiling mounted or wall mounted
Optional - application of 110 V operating voltage
Optional - metal hanger or hook

Please refer to "Pictogram Table" in "Emergency Exit Luminaries Overview" section of the catalogue for alternatives.

CE RoHS LED OSRAM LED Technology included

SELV | 230 VAC 50/60 Hz | IP 20 | 41 ALU | V0 ABS | CEM1 PCB | SMD | -|||- Ni-Cd | EN 60598-2-22

In accordance with EN 60598-1, EN 60598-2-22 standards.

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE *	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYAL04-A/LED/CY	1 / 3 h	Non- Maintained	7 X 0,35 W LED	Double-sided	Surface Mounted - Plastic Hanger
BYAL04-A/LED/CY/MT	1 / 3 h	Non- Maintained	7 X 0,35 W LED	Double-sided	Surface Mounted - Metal Hanger
BYAL04-S/LED/CY	1 / 3 h	Maintained	7 X 0,35 W LED	Double-sided	Surface Mounted - Plastic Hanger
BYAL04-S/LED/CY/MT	1 / 3 h	Maintained	7 X 0,35 W LED	Double-sided	Surface Mounted - Metal Hanger
BYAL04-A/LED/TY	1 / 3 h	Non- Maintained	7 X 0,35 W LED	Single-sided	Surface Mounted - Plastic Hanger
BYAL04-A/LED/TY/MT	1 / 3 h	Non- Maintained	7 X 0,35 W LED	Single-sided	Surface Mounted - Metal Hanger
BYAL04-S/LED/TY	1 / 3 h	Maintained	7 X 0,35 W LED	Single-sided	Surface Mounted - Plastic Hanger
BYAL04-S/LED/TY/MT	1 / 3 h	Maintained	7 X 0,35 W LED	Single-sided	Surface Mounted - Metal Hanger

* Maintained: Lights on mains and stays alight in case of the mains failure.
* Non-Maintained: Lights in case of the mains failure.

MAINS DATA

PRODUCT CODE	RATED POWER (W) *	MAINS CURRENT (A) *	DIMENSIONS (En x Boy x Yük.)	WEIGHT (kg)	QTY in CARTON BOX
BYAL04-A/LED/CY/1H	2,0	0,018	335x63x220	1,030	1
BYAL04-A/LED/CY/3H	2,3	0,022	335x63x220	1,200	1
BYAL04-A/LED/CY/MT/1H	2,0	0,018	335x63x220	1,110	1
BYAL04-A/LED/CY/MT/3H	2,3	0,022	335x63x220	1,280	1
BYAL04-S/LED/CY/1H	7,3	0,034	335x63x220	1,080	1
BYAL04-S/LED/CY/3H	7,6	0,038	335x63x220	1,250	1
BYAL04-S/LED/CY/MT/1H	7,3	0,034	335x63x220	1,160	1
BYAL04-S/LED/CY/MT/3H	7,6	0,038	335x63x220	1,330	1
BYAL04-A/LED/TY/1H	2,0	0,018	335x63x220	1,165	1
BYAL04-A/LED/TY/3H	2,3	0,022	335x63x220	1,335	1
BYAL04-A/LED/TY/MT/1H	2,0	0,018	335x63x220	1,245	1
BYAL04-A/LED/TY/MT/3H	2,3	0,022	335x63x220	1,415	1
BYAL04-S/LED/TY/1H	7,3	0,034	335x63x220	1,215	1
BYAL04-S/LED/TY/3H	7,6	0,038	335x63x220	1,385	1
BYAL04-S/LED/TY/MT/1H	7,3	0,034	335x63x220	1,295	1
BYAL04-S/LED/TY/MT/3H	7,6	0,038	335x63x220	1,365	1

* Measured under 230 V mains.

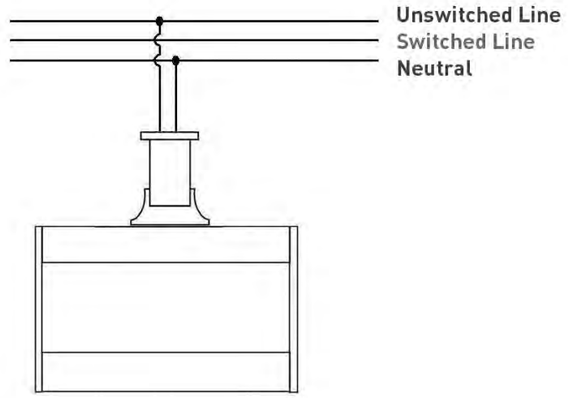
TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	SIGN DIMENSIONS :	130 x 335 mm
AMBIENT TEMPERATURE (ta) :	-10 °C ... +40 °C	VIEWING DISTANCE :	26 m
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	I
BATTERY TYPE :	3,6 V NiCd		

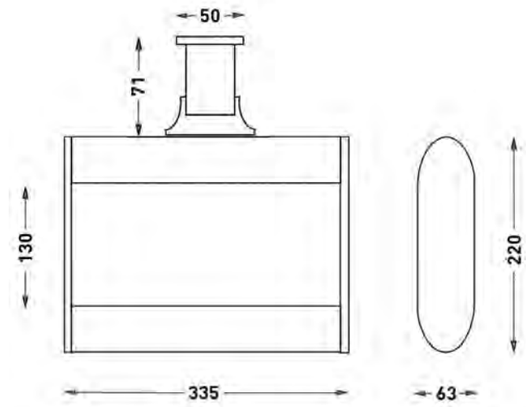
CONTROL PANEL

- **CHARGE** : Charge Status Display LED . Indicates charging process of the battery
- **TEST :** Test Button. Enables testing the product without mains cuts
- **FULL :** Battery Status Display LED. Indicates the occupancy level of the battery

WIRING DIAGRAM



TECHNICAL DRAWING



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EMERGENCY EXIT LUMINARY - LED

SOMON LED (BYPL01-LED)

- Single-sided
- Non-flammable nylon 6 added case
- Polycarbonate glass
- IP 44 Protection Class
- SMD LED application
- Charge and battery capacity status display with green LEDs
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Back Lighting
- Wall mounted
- Optional - application of 110 V operating voltage

Please refer to "Pictogram Table" in "Emergency Exit Luminaries Overview" section of the catalogue for alternatives.

CE RoHS LED OSRAM LED Technology included

SELV | 230 VAC 50/60 Hz | IP 44 | 41 ALU | N6 GBR | CEM1 PCB | SMD | -Ili- Ni-Cd | EN 60598-2-22

In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	SIGN DIMENSIONS :	100 x 335 mm
AMBIENT TEMPERATURE (ta) :	-10 °C ... +40 °C	VIEWING DISTANCE :	20 m
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 44
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II
BATTERY TYPE :	3,6 V NiCd		

CONTROL PANEL

- **CHARGE** : Charge Status Display LED . Indicates charging process of the battery
- **TEST :** Test Button. Enables testing the product without mains cuts
- **FULL :** Battery Status Display LED. Indicates the occupancy level of the battery

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE *	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYPL01I-A-LED	1 / 3 h	Non- Maintained	20 X 0,1 W LED	Single-sided	Wall Mounted
BYPL01I-S-LED	1 / 3 h	Maintained	20 X 0,1 W LED	Single-sided	Wall Mounted

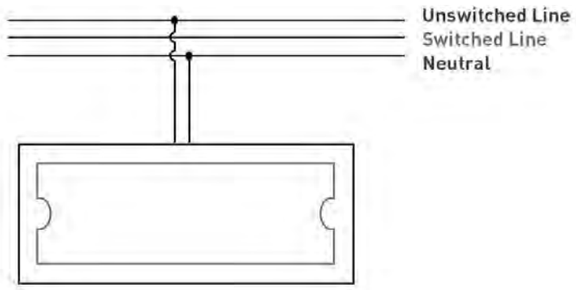
* Maintained: Lights on mains and stays alight in case of the mains failure.
* Non-Maintained: Lights in case of the mains failure.

MAINS DATA

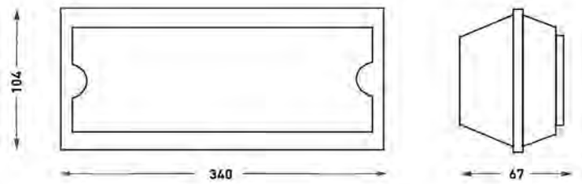
PRODUCT CODE	RATED POWER (W) *	MAINS CURRENT (A) *	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYPL01I-A-LED/1H	2,0	0,018	104x340x67	0,638	1
BYPL01I-A-LED/3H	2,3	0,022	104x340x67	0,808	1
BYPL01I-S-LED/1H	7,3	0,034	104x340x67	0,685	1
BYPL01I-S-LED/3H	7,6	0,038	104x340x67	0,855	1

* Measured under 230 V mains.

WIRING DIAGRAM



TECHNICAL DRAWING



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EMERGENCY EXIT LUMINARY FLUORESCENT LAMP

LAPIN (BYAL06) / LIPSOS (BYAL07)

Single- or double-sided
Anodized aluminum case
Non-flammable ABS edge and hanger
8 W- T5 Fluorescent Tube
Charge and battery capacity status display with green LEDs
Test switch
High-temperature Ni-Cd battery cells
Overcharge and deep discharge protection
White acrylic plate
Back Lighting
Ceiling mounted, ceiling recessed or wall mounted
Optional - application of 110 V operating voltage
Optional - metal hanger or hook

Please refer to "Pictogram Table" in "Emergency Exit Luminaries Overview" section of the catalogue for alternatives.

CE RoHS TL5/4P

SELV | 230 VAC 50/60 Hz | IP 20 | 41 ALU | V0 ABS | CEM1 PCB | SMD | -|ıı|- Ni-Cd | EN 60598-2-22

In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	SIGN DIMENSIONS :	140 x 335 mm
AMBIENT TEMPERATURE (ta) :	-10 °C ... +40 °C	VIEWING DISTANCE :	28 m
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	I
BATTERY TYPE :	3,6 V NiCd		

CONTROL PANEL

- **CHARGE** : Charge Status Display LED . Indicates charging process of the battery
- **TEST :** Test Button. Enables testing the product without mains cuts
- **FULL :** Battery Status Display LED. Indicates the occupancy level of the battery

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE **	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYAL06-A	1 / 3 h	Non- Maintained	8 W- T5 Fluorescent	Double-sided (Lapin)	Surface Mounted - Plastic Hanger
BYAL06-A/MT	1 / 3 h	Non- Maintained	8 W- T5 Fluorescent	Double-sided (Lapin)	Surface Mounted - Metal Hanger
BYAL06-A/SA	1 / 3 h	Non- Maintained	8 W- T5 Fluorescent	Double-sided (Lapin)	Recessed Mounted
BYAL06-S	1 / 3 h	Maintained	8 W- T5 Fluorescent	Double-sided (Lapin)	Surface Mounted - Plastic Hanger
BYAL06-S/MT	1 / 3 h	Maintained	8 W- T5 Fluorescent	Double-sided (Lapin)	Surface Mounted - Metal Hanger
BYAL06-S/SA	1 / 3 h	Maintained	8 W- T5 Fluorescent	Double-sided (Lapin)	Recessed Mounted
BYAL07-A	1 / 3 h	Non- Maintained	8 W- T5 Fluorescent	Single-sided (Lipsos)	Surface Mounted - Plastic Hanger
BYAL07-A/MT	1 / 3 h	Non- Maintained	8 W- T5 Fluorescent	Single-sided (Lipsos)	Surface Mounted - Metal Hanger
BYAL07-A/SA	1 / 3 h	Non- Maintained	8 W- T5 Fluorescent	Single-sided (Lipsos)	Recessed Mounted
BYAL07-S	1 / 3 h	Maintained	8 W- T5 Fluorescent	Single-sided (Lipsos)	Surface Mounted - Plastic Hanger
BYAL07-S/MT	1 / 3 h	Maintained	8 W- T5 Fluorescent	Single-sided (Lipsos)	Surface Mounted - Metal Hanger
BYAL07-S/SA	1 / 3 h	Maintained	8 W- T5 Fluorescent	Single-sided (Lipsos)	Recessed Mounted

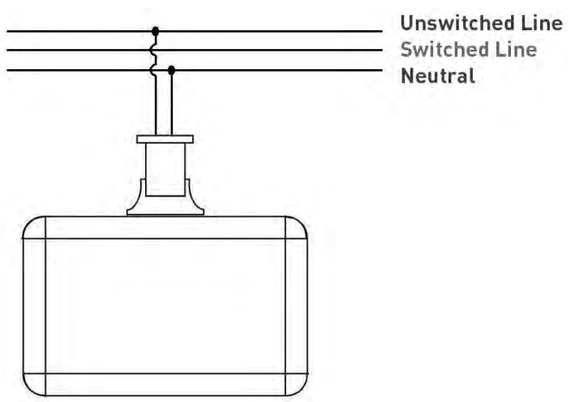
* Maintained: Lights on mains and stays alight in case of the mains failure.
* Non-Maintained: Lights in case of the mains failure.

MAINS DATA

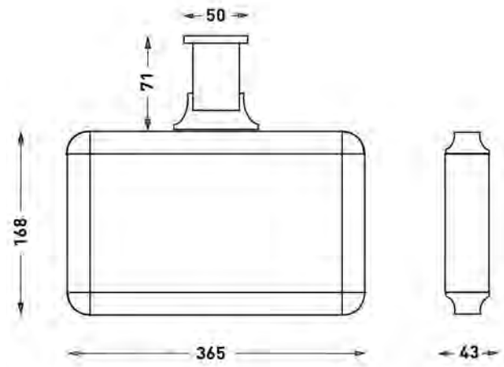
PRODUCT CODE	RATED POWER (W) *	MAINS CURRENT (A) *	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYAL06-A/1H	1,4	0,013	365x43x168	0,825	1
BYAL06-A/3H	2,1	0,015	365x43x168	0,985	1
BYAL06-A/MT/1H	1,4	0,013	365x43x168	0,900	1
BYAL06-A/MT/3H	2,1	0,015	365x43x168	1,060	1
BYAL06-A/SA/1H	1,4	0,013	425x43x186	1,045	1
BYAL06-A/SA/3H	2,1	0,015	425x43x186	1,205	1
BYAL06-S/1H	10	0,070	365x43x168	0,885	1
BYAL06-S/3H	11	0,075	365x43x168	1,045	1
BYAL06-S/MT/1H	10	0,070	365x43x168	0,960	1
BYAL06-S/MT/3H	11	0,075	365x43x168	1,120	1
BYAL06-S/SA/1H	10	0,070	425x43x186	1,105	1
BYAL06-S/SA/3H	11	0,075	425x43x186	1,265	1
BYAL07-A/1H	1,4	0,013	365x43x168	0,970	1
BYAL07-A/3H	2,1	0,015	365x43x168	1,130	1
BYAL07-A/MT/1H	1,4	0,013	365x43x168	1,070	1
BYAL07-A/MT/3H	2,1	0,015	365x43x168	1,230	1
BYAL07-A/SA/1H	1,4	0,013	425x43x186	1,215	1
BYAL07-A/SA/3H	2,1	0,015	425x43x186	1,375	1
BYAL07-S/1H	10	0,070	365x43x168	1,030	1
BYAL07-S/3H	11	0,075	365x43x168	1,190	1
BYAL07-S/MT/1H	10	0,070	365x43x168	1,130	1
BYAL07-S/MT/3H	11	0,075	365x43x168	1,290	1
BYAL07-S/SA/1H	10	0,070	425x43x186	1,275	1
BYAL07-S/SA/3H	11	0,075	425x43x186	1,435	1

* Measured under 230 V mains.

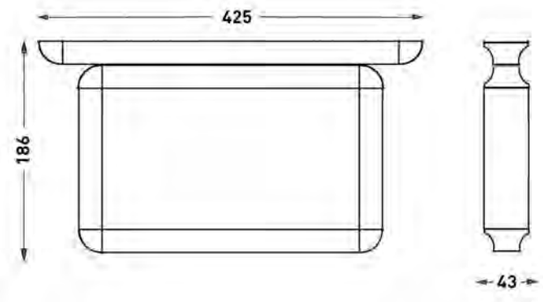
WIRING DIAGRAM



TECHNICAL DRAWING / SURFACE MOUNTED



TECHNICAL DRAWING / RECESSED MOUNTED



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY EXIT LUMINARY FLUORESCENT LAMP

LAPIN XL (BYAL-XL06) / LIPSOS XL (BYAL-XL07)

- Single- or double-sided
- Anodized aluminum case
- Non-flammable ABS edge and hanger
- 13 W - T5 Fluorescent Tube
- Charge and battery capacity status display with green LEDs
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- White acrylic plate
- Back Lighting
- Ceiling mounted or wall mounted
- Optional - application of 110 V operating voltage
- Optional - metal hanger or hook

Please refer to "Pictogram Table" in "Emergency Exit Luminaries Overview" section of the catalogue for alternatives.

CE RoHS TL5/4P

SELV | 230 VAC 50/60 Hz | IP 20 | 41 ALU | V0 ABS | CEM1 PCB | SMD | -III- Ni-Cd | EN 60598-2-22

In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	SIGN DIMENSIONS :	400 x 600 mm
AMBIENT TEMPERATURE (ta) :	-10 °C ... +40 °C	VIEWING DISTANCE :	80 m
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 - 48 h	INSULATION CLASS :	I
BATTERY TYPE :	3,6 V NiCd		

CONTROL PANEL

- **CHARGE** : Charge Status Display LED . Indicates charging process of the battery
- **TEST :** Test Button. Enables testing the product without mains cuts
- **FULL :** Battery Status Display LED. Indicates the occupancy level of the battery

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE *	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYAL-XL06-A	1 / 3 h	Non- Maintained	13 W - T5 Fluorescent	Double-sided (Lapin)	Surface Mounted - Hook Hanger
BYAL-XL06-S	1 / 3 h	Maintained	13 W - T5 Fluorescent	Double-sided (Lapin)	Surface Mounted - Hook Hanger
BYAL-XL07-A	1 / 3 h	Non- Maintained	13 W - T5 Fluorescent	Single-sided (Lipsos)	Wall Mounted
BYAL-XL07-S	1 / 3 h	Maintained	13 W - T5 Fluorescent	Single-sided (Lipsos)	Wall Mounted

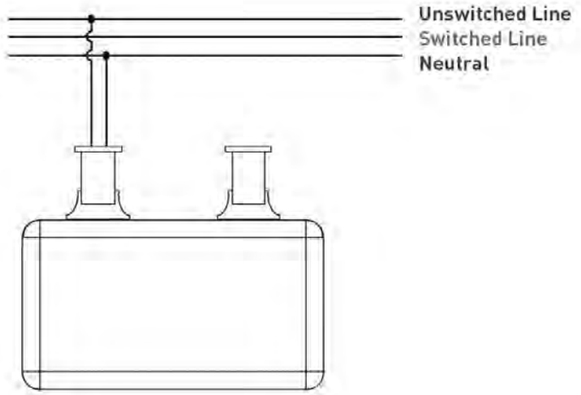
* Maintained : Lights on mains and stays alight in case of the mains failure.
* Non-Maintained : Lights in case of the mains failure.

MAINS DATA

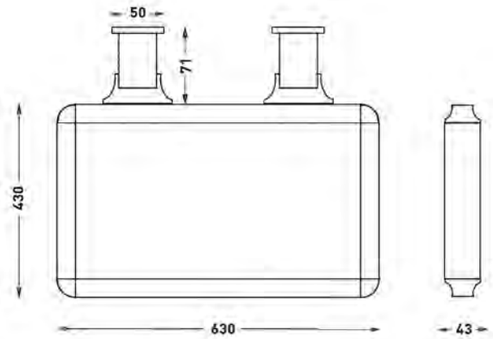
PRODUCT CODE	RATED POWER (W) *	MAINS CURRENT (A) *	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYAL-XL06-A/1H	2,7	0,015	630x43x430	2,190	1
BYAL-XL06-A/3H	3,5	0,018	630x43x430	2,345	1
BYAL-XL06-S/1H	17	0,100	630x43x430	2,195	1
BYAL-XL06-S/3H	18	0,110	630x43x430	2,355	1
BYAL-XL07-A/1H	2,7	0,015	630x43x430	2,190	1
BYAL-XL07-A/3H	3,5	0,018	630x43x430	2,345	1
BYAL-XL07-S/1H	17	0,100	630x43x430	2,195	1
BYAL-XL07-S/3H	18	0,110	630x43x430	2,355	1

* Measured under 230 V mains.

WIRING DIAGRAM



TECHNICAL DRAWING



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY EXIT LUMINARY FLUORESCENT LAMP

MERCAN (BYAL04)

Single- or double-sided
Anodized aluminum case
Non-flammable ABS side cover and hanger
8 W - T5 Fluorescent Tube
Charge and battery capacity status display with green LEDs
Test switch
High-temperature Ni-Cd battery cells
Overcharge and deep discharge protection
White acrylic plate
Back Lighting
Ceiling mounted or wall mounted
Optional - application of 110 V operating voltage
Optional - metal hanger or hook

Please refer to "Pictogram Table" in "Emergency Exit Luminaries Overview" section of the catalogue for alternatives.

CE RoHS TSE TL5/4P

SELV | 230 VAC 50/60 Hz | IP 20 | 41 ALU | V0 ABS | CEM1 PCB | SMD | -Ili- Ni-Cd | EN 60598-2-22

In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	SIGN DIMENSIONS :	130 x 335 mm
AMBIENT TEMPERATURE (ta) :	-10 °C ... +40 °C	VIEWING DISTANCE :	26 m
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	I
BATTERY TYPE :	3,6 V NiCd		

CONTROL PANEL

- **CHARGE** : Charge Status Display LED . Indicates charging process of the battery
- **TEST :** Test Button. Enables testing the product without mains cuts
- **FULL :** Battery Status Display LED. Indicates the occupancy level of the battery

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE *	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYAL04-A/CY	1 / 3 h	Non- Maintained	8 W - T5 Fluorescent	Double-sided	Surface Mounted - Plastic Hanger
BYAL04-A/CY/MT	1 / 3 h	Non- Maintained	8 W - T5 Fluorescent	Double-sided	Surface Mounted - Metal Hanger
BYAL04-A/TY	1 / 3 h	Non- Maintained	8 W - T5 Fluorescent	Single-sided	Surface Mounted - Plastic Hanger
BYAL04-A/TY/MT	1 / 3 h	Non- Maintained	8 W - T5 Fluorescent	Single-sided	Surface Mounted - Metal Hanger
BYAL04-S/CY	1 / 3 h	Maintained	8 W - T5 Fluorescent	Double-sided	Surface Mounted - Plastic Hanger
BYAL04-S/CY/MT	1 / 3 h	Maintained	8 W - T5 Fluorescent	Double-sided	Surface Mounted - Metal Hanger
BYAL04-S/TY	1 / 3 h	Maintained	8 W - T5 Fluorescent	Single-sided	Surface Mounted - Plastic Hanger
BYAL04-S/TY/MT	1 / 3 h	Maintained	8 W - T5 Fluorescent	Single-sided	Surface Mounted - Metal Hanger

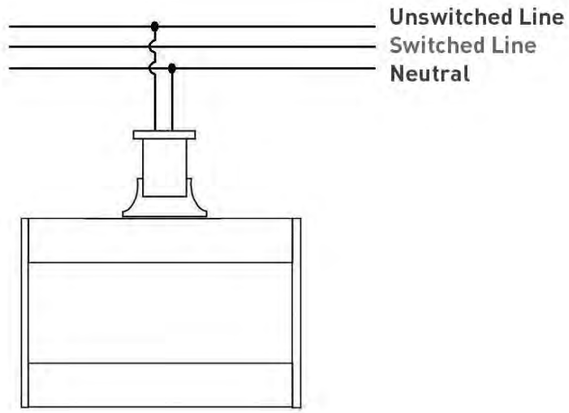
* Maintained : Lights on mains and stays alight in case of the mains failure.
* Non-Maintained : Lights in case of the mains failure.

MAINS DATA

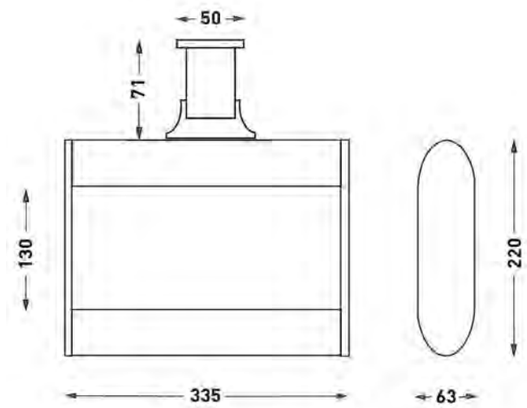
PRODUCT CODE	RATED POWER (W) *	MAINS CURRENT (A) *	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYAL04-A/CY/1H	1,4	0,013	335x63x220	1,145	1
BYAL04-A/CY/3H	2,1	0,015	335x63x220	1,205	1
BYAL04-A/CY/MT/1H	1,4	0,013	335x63x220	1,225	1
BYAL04-A/CY/MT/3H	2,1	0,015	335x63x220	1,285	1
BYAL04-A/TY/1H	1,4	0,013	335x63x220	1,290	1
BYAL04-A/TY/3H	2,1	0,015	335x63x220	1,350	1
BYAL04-A/TY/MT/1H	1,4	0,013	335x63x220	1,370	1
BYAL04-A/TY/MT/3H	2,1	0,015	335x63x220	1,430	1
BYAL04-S/CY/1H	10	0,070	335x63x220	1,205	1
BYAL04-S/CY/3H	11	0,075	335x63x220	1,265	1
BYAL04-S/CY/MT/1H	10	0,070	335x63x220	1,285	1
BYAL04-S/CY/MT/3H	11	0,075	335x63x220	1,345	1
BYAL04-S/TY/1H	10	0,070	335x63x220	1,350	1
BYAL04-S/TY/3H	11	0,075	335x63x220	1,410	1
BYAL04-S/TY/MT/1H	10	0,070	335x63x220	1,430	1
BYAL04-S/TY/MT/3H	11	0,075	335x63x220	1,490	1

* Measured under 230 V mains.

WIRING DIAGRAM



TECHNICAL DRAWING



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY EXIT LUMINARY FLUORESCENT LAMP

SOMON (BYPL01)

- Single-sided
- Non-flammable nylon 6 added case
- Polycarbonate glass
- IP 44 Protection Class
- 8 W - T5 Fluorescent Tube
- Charge and battery capacity status display with green LEDs
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Back Lighting
- Wall-mounted
- Optional - application of 110 V operating voltage

Please refer to "Pictogram Table" in "Emergency Exit Luminaries Overview" section of the catalogue for alternatives.

CE RoHS TL5/4P

SELV | 230 VAC 50/60 Hz | IP-44 | N6 GBR | CEM1 PCB | SMD | -III- Ni-Cd | EN 60598-2-22

In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	SIGN DIMENSIONS :	100 x 335 mm
AMBIENT TEMPERATURE (ta) :	-10 °C ... +40 °C	VIEWING DISTANCE :	20 m
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 44
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II
BATTERY TYPE :	3,6 V NiCd		

CONTROL PANEL

- **CHARGE** : Charge Status Display LED . Indicates charging process of the battery
- **TEST :** Test Button. Enables testing the product without mains cuts
- **FULL :** Battery Status Display LED. Indicates the occupancy level of the battery

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE *	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYPL01-A-1X08W	1 / 3 h	Non- Maintained	8 W - T5 Fluorescent	Single-sided	Wall Mounted
BYPL01-S-1X08W	1 / 3 h	Maintained	8 W - T5 Fluorescent	Single-sided	Wall Mounted

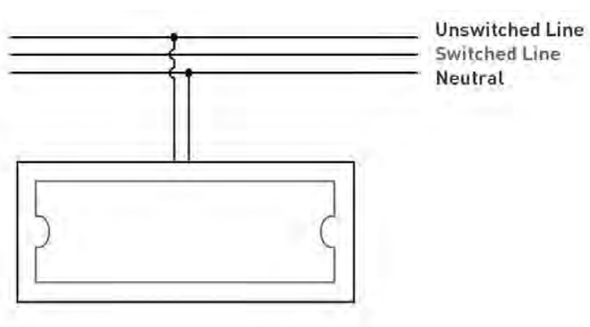
* Maintained : Lights on mains and stays alight in case of the mains failure.
* Non-Maintained : Lights in case of the mains failure.

MAINS DATA

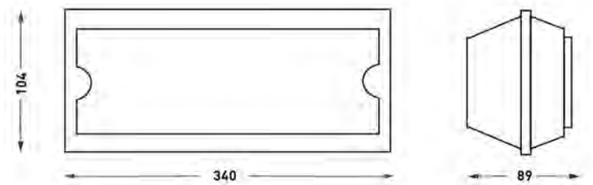
PRODUCT CODE	RATED POWER (W) *	MAINS CURRENT (A) *	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYPL01-A-1X08W/1H	1,5	0,010	104x340x89	0,610	1
BYPL01-A-1X08W/3H	2,0	0,015	104x340x89	0,770	1
BYPL01-S-1X08W/1H	10	0,070	104x340x89	0,670	1
BYPL01-S-1X08W/3H	11	0,075	104x340x89	0,840	1

* Measured under 230 V mains.

WIRING DIAGRAM



TECHNICAL DRAWING



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EMERGENCY EXIT LUMINARY FLUORESCENT LAMP

LAPIN (BYS01) / LIPSOS (BYS02)

- Single- or double-sided
- Powder coating white iron sheet
- 8 W- T5 Fluorescent Tube
- Charge and battery capacity status display with green LEDs
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- White acrylic sheet
- Back lighting
- Ceiling mounted or wall mounted
- Optional - application of 110 V operating voltage

Please refer to "Pictogram Table" in "Emergency Exit Luminaries Overview" section of the catalogue for alternatives.

CE RoHS TSE TL5/4P

SELV | 230 VAC 50/60 Hz | IP 20 | CEM1 PCB | SMD | -|ıl|- Ni-Cd | EN 60598-2-22

In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	SIGN DIMENSIONS :	140 x 335 mm
AMBIENT TEMPERATURE (ta) :	-10 °C ... +40 °C	VIEWING DISTANCE :	28 m
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	I
BATTERY TYPE :	3,6 V NiCd		

CONTROL PANEL

- **CHARGE** : Charge Status Display LED . Indicates charging process of the battery
- **TEST :** Test Button. Enables testing the product without mains cuts
- **FULL :** Battery Status Display LED. Indicates the occupancy level of the battery

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE *	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYS01-A	1 / 3 h	Non- Maintained	8 W - T5 Fluorescent	Double-sided (Lapin)	Surface Mounted - Hook Hanger
BYS01-S	1 / 3 h	Maintained	8 W - T5 Fluorescent	Double-sided (Lapin)	Surface Mounted - Hook Hanger
BYS02-A	1 / 3 h	Non- Maintained	8 W - T5 Fluorescent	Single-sided (Lipsos)	Wall Mounted
BYS02-S	1 / 3 h	Maintained	8 W - T5 Fluorescent	Single-sided (Lipsos)	Wall Mounted

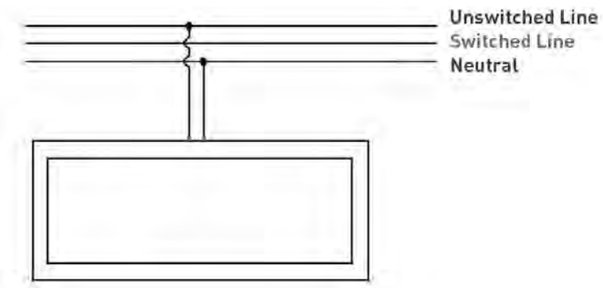
* Maintained : Lights on mains and stays alight in case of the mains failure.
* Non-Maintained : Lights in case of the mains failure.

MAINS DATA

PRODUCT CODE	RATED POWER (W) *	MAINS CURRENT (A) *	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYS01-A/1H	1,4	0,013	72x342x142	1,315	1
BYS01-A/3H	2,1	0,015	72x342x142	1,475	1
BYS01-S/1H	10	0,070	72x342x142	1,375	1
BYS01-S/3H	11	0,075	72x342x142	1,535	1
BYS02-A/1H	1,4	0,013	72x342x142	1,460	1
BYS02-A/3H	2,1	0,015	72x342x142	1,620	1
BYS02-S/1H	10	0,070	72x342x142	1,520	1
BYS02-S/3H	11	0,075	72x342x142	1,680	1

* Measured under 230 V mains.

WIRING DIAGRAM



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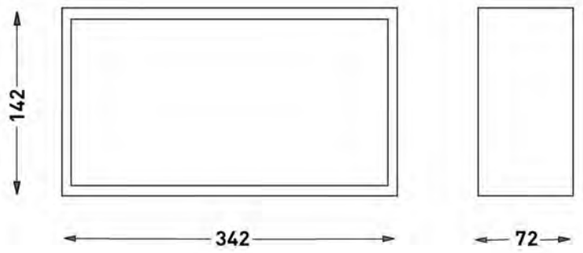

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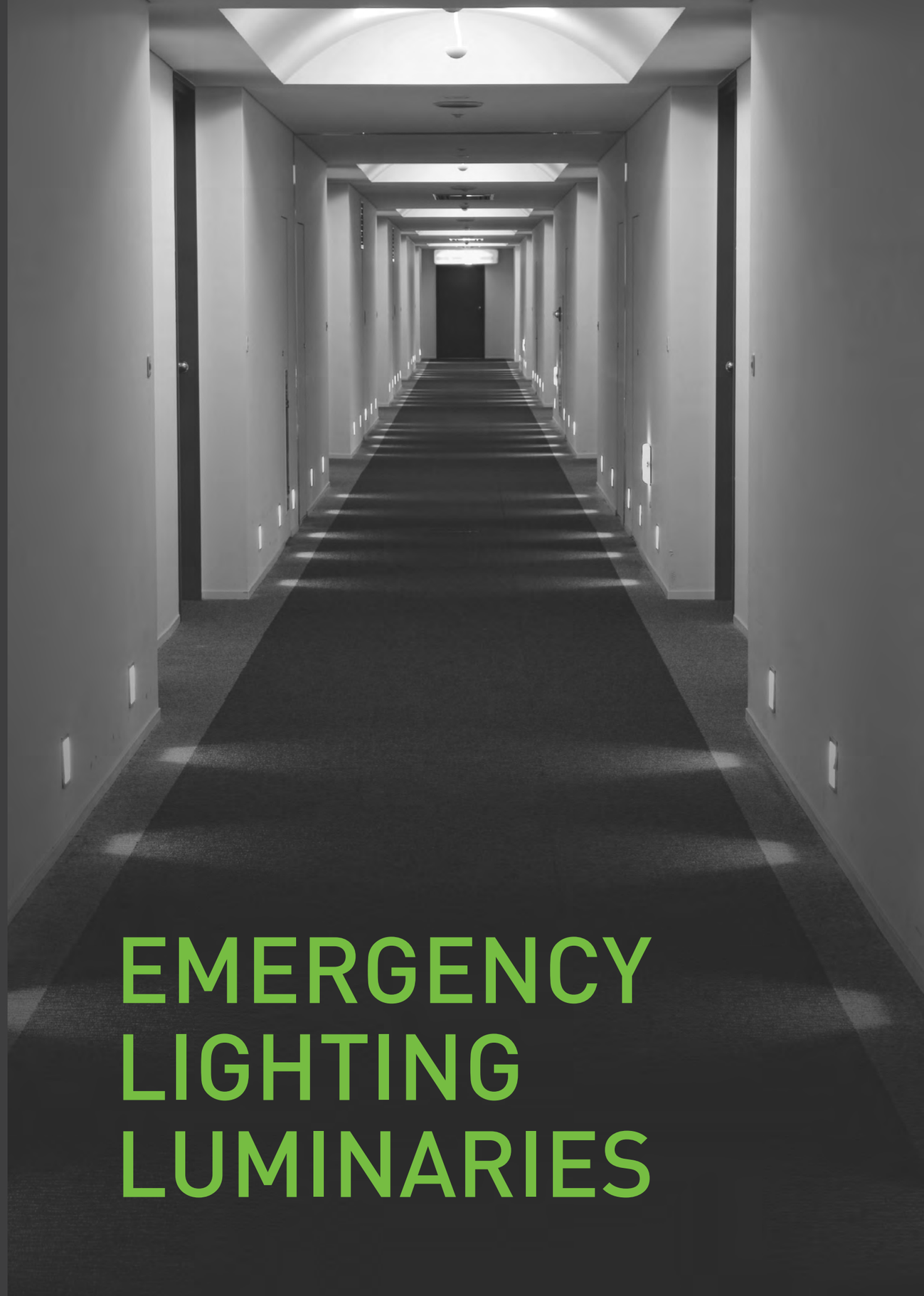


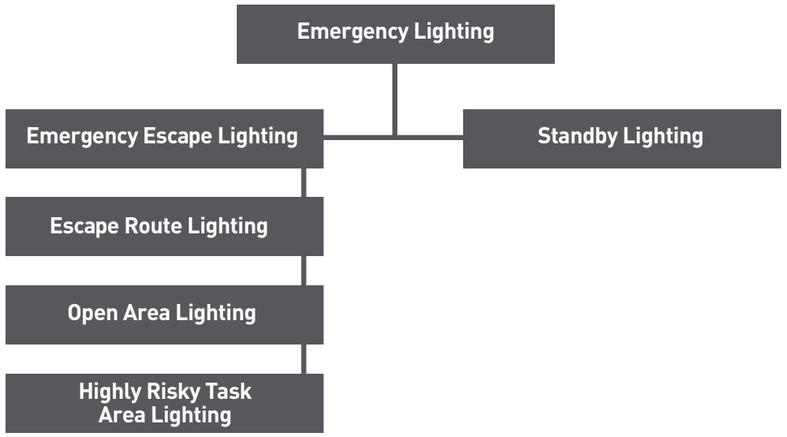
EMERGENCY LIGHTING LUMINARIES

EMERGENCY LIGHTING LUMINARIES

OVERVIEW

EMERGENCY LIGHTING SYSTEM

Emergency lighting systems are the systems that become automatically active and provide adequate lighting when the main power or a similar external electric supply is interrupted due to a breakdown, when the power in a building is cut for safety reasons in the case of a fire or an earthquake and when normal lighting is interrupted after a circuit breaker or a fuse is switched on.



Standby Lighting

Standby lighting is the emergency lighting type envisaged for the continuity of the current conditions and the operations before the interruption of normal lighting. This lighting type is not included in emergency escape scenarios.

Emergency Escape Lighting

Emergency escape lighting is the emergency lighting that provides the necessary lighting for the safety of the people who are evacuating a building or an area in the case of an emergency, or who are trying to finalize a potentially hazardous action before evacuation. There are 3 types of emergency escape lighting.

A- Escape Route Lighting

Escape route lighting is the emergency lighting type that assists in the safe evacuation of the people from the building by illuminating the escape routes in the case of an emergency.

B- Open Area Lighting

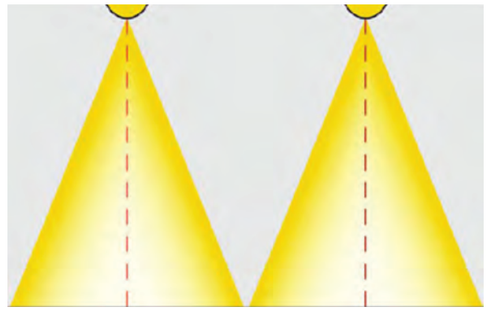
Open area lighting is the lighting type envisaged for areas larger than $60m^2$ or for gathering points and it provides access to the predetermined escape routes in the case of an emergency. It is also known as anti-panic lighting.

C- Highly Risky Task Area Lighting

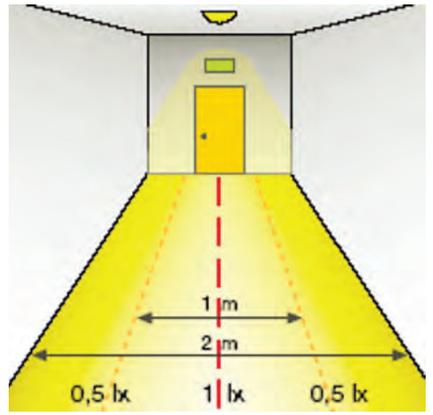
Highly risky task area lighting is the lighting that is manufactured for the safety of the people who are located in areas where possibly hazardous processes or conditions may occur in the case of emergency. In certain systems, it provides the users with opportunities for appropriate deactivation.

ESCAPE ROUTE LIGHTING

The emergency lighting level has to be set at 1 lux at least at any point of the central line of the escape route. At the end of the emergency operating period, the lighting level should not fall below the level of 0.5 lux at any point. The lighting level ratio between the points with the highest and lowest lighting levels must not be more than 1/40. 50% of the required level of the emergency lighting must be provided within 5 seconds and full capacity must be reached within 60 seconds. Emergency lighting for the purpose of evacuation must be on at least for one hour.

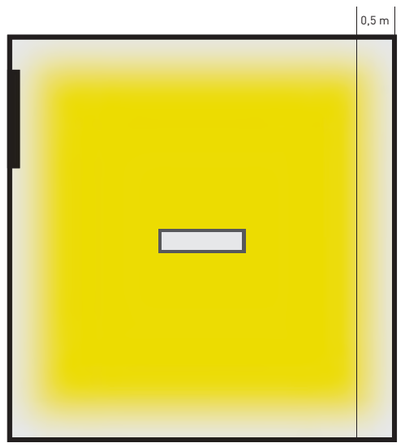


E_{max}: E_{min} ≤ 40 : 1 lx



OPEN AREA (ANTI - PANIC) LIGHTING

According to EN 1838 and EN 60598-2-22 standards, areas and gathering points larger than $60m^2$ are classified as open areas. The magnitude of illumination above the floor level at open areas must be at least 0.5 lux. The edges and the area surrounding the edges within 0.5 meter are not included in this scope. The ratio of the magnitude of illumination between the most and the least illuminated points in open areas must not be more than 40:1.



Minimum lighting level
E_{min} = 0.5 lx

Minimum-maximum lighting level ratio
E_{max} : E_{min} ≤ 40 : 1 lx

Color rendering index
CRI ≥ 40

Period specified for emergency escape
1 hour

HIGHLY RISKY TASK AREA LIGHTING

Energy distribution, production and industrial process control rooms, engine-generator control rooms, locations that have machines in motion, elevators and conveyors that do not immediately stop when the power is cut are classified as highly risky and hazardous areas. Emergency lighting level in areas with a high risk of a dangerous situation must not be less than 10% of the normal lighting level.

Minimum lighting level
E_{min} = 15 lx

Minimum-maximum lighting level ratio
$E_{max} : E_{min} \leq 10 : 1$ lx

Color rendering index
CRI ≥ 40

Period specified for emergency escape
As long as the risk exists

EMERGENCY LIGHTING LUMINARIES

Escape Route Lighting Luminaries

According to the standards, they must be installed at a height between 2 and 4.5 meters. They can be directly installed on the walls, ceilings or mounted ceilings or they can be hung down by using components such as hangers, chains and slings.

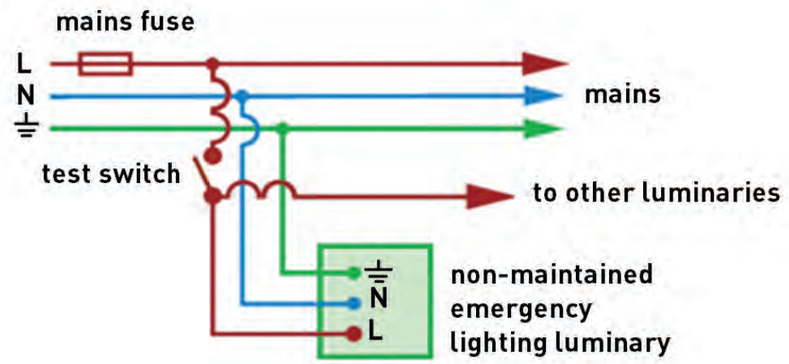
Open Area Lighting Luminaries

Open area emergency lighting luminaries have lamps with moving head. These lamps can be projected towards the desired direction. They can be used in large areas such as factories and garages and in surroundings that require a high level of lighting.

OPERATING MODES OF EMERGENCY LIGHTING LUMINARIES

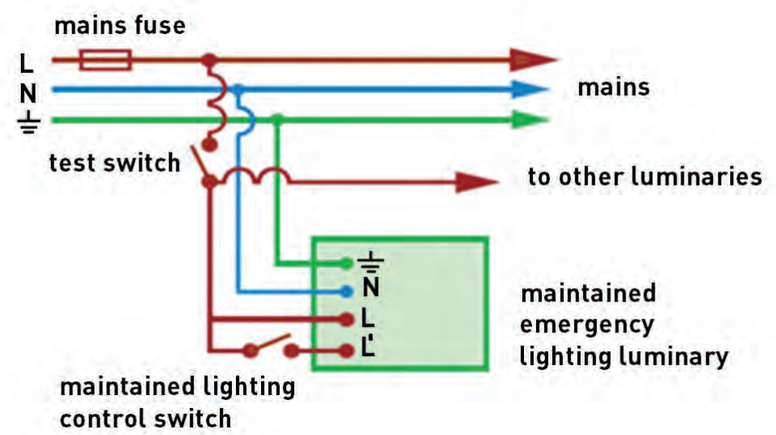
Non-Maintained Mode

The lamp does not provide light when the main power is at its normal value. It starts providing light in the case of a main power failure. The lamp is switched on by means of the battery inside the luminary in the case of a failure.



Maintained Mode

In this type of luminaries, the lamp provides light when the mains voltage is at its normal value. In the case of a main powerfailure, it continues to provide light by means of the battery in the luminary. In some versions, the lamp can be switched off when desired by installing an external switch.



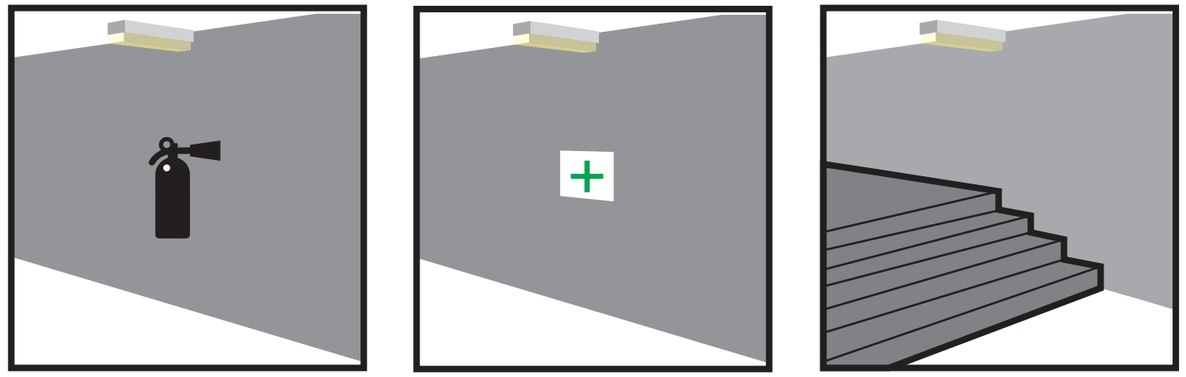
LOCATIONS WHERE THE USE OF EMERGENCY LIGHTING SYSTEM IS COMPULSORY

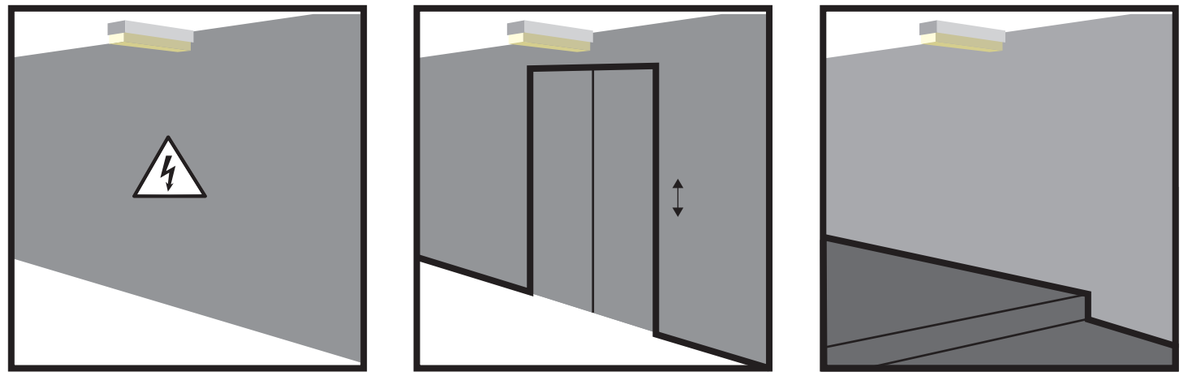
The use of emergency lighting is compulsory in the following locations

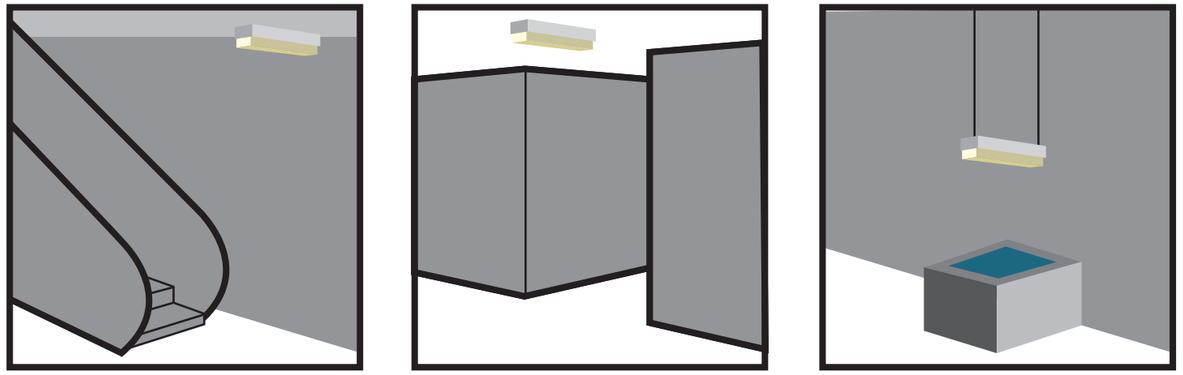
- All escape routes,
- Locations which are used for gathering,
- Elevators and escalators,
- Locations where ground level changes and the intersections of corridors,
- Workshops and laboratories where machinery in motion and chemicals that pose high risk are located,
- Electricity distribution and generator rooms,
- Central battery unit rooms,
- Gas stations,
- Indoors car parks,
- Areas where first aid and safety kits are located,
- Areas where fire alarm buttons and fire cabinets are located.

The use of emergency lighting is compulsory in the following buildings

- Hospitals, nursing homes and buildings for education,
- All buildings with a occupants load of 200 or more,
- Buildings with 50 or more occupants under the ground level,
- Buildings without windows,
- Hotels, motels and dormitories,
- Highly hazardous locations,
- Tall buildings.



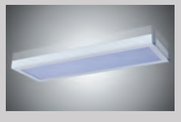


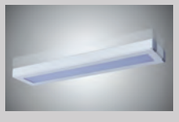


EMERGENCY LIGHTING LUMINARIES

PRODUCTS

LED PANEL LUMINARY
(LPN-ARM)





- Indoor use
- Surface-mounted
- Aluminum anodized body
- Non-flammable ABS edge
- Homogenous light with smooth outer diffuser
- TUV Certified Bes A LED driver
- TUV Certified Bes A emergency lighting unit
- SMD LED application
- High energy saving (50%)
- Long life-time: 50.000 hours
- Luminous flux range between 850 – 10.000 lm
- Emergency lighting function by interruption of the unswitched phase
- Emergency lighting function in case of low-voltage
- 1 - 3 h duration in emergency case
- Charge status display with green LED
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Battery charge and capacity status display with green LED
- Optional - radar sensor

TÜVRheinland · CE · RoHS · LED · OSRAM LED Technology included

SELV · 230 VAC 50/60 Hz · IP 20 · V0 ABS · FR4 PCB · SMD · -III- Ni-Cd · EN 60598-2-22

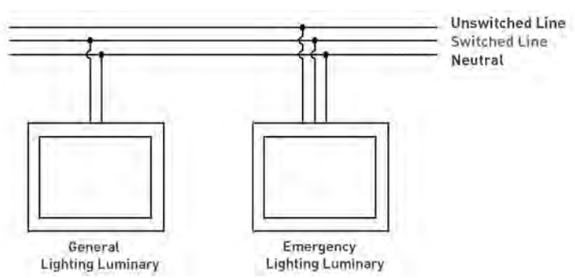
In accordance with EN 60598-1, EN 60598-22.

PRODUCT LIST

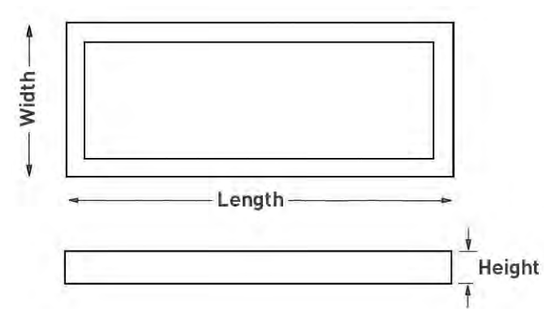
PRODUCT CODE	LIGHT POWER (W)	LIGHT INTENSITY (lm)	POWER CONSUMPTION (W)*	MAINS CURRENT (A) *	DIMENSIONS (mm)	WEIGHT (kg)**	QTY in CARTON BOX
LPN-ARM/20X60/15W	15	1500	18.5	0.095	200x648x62	3,250	1
LPN-ARM/20X60/22W	22	2150	27	0.140	200x648x62	3,250	1
LPN-ARM/20X90/22W	22	2150	27	0.140	200x921x62	4100	1
LPN-ARM/20X90/30W	30	2900	36	0.185	200x921x62	4,100	1
LPN-ARM/20X120/30W	30	2900	36	0.185	200x1247x62	4,900	1
LPN-ARM/20X120/46W	46	4450	52	0.235	200x1247x62	4,900	1
LPN-ARM/30X30/09W	9	850	14	0.080	350x350x62	2,400	1
LPN-ARM/30X30/20W	20	1950	25	0.130	350x350x62	2,550	1
LPN-ARM/30X60/22W	22	2150	27	0.140	350x600x62	3,300	1
LPN-ARM/30X60/46W	46	4450	52	0.235	350x600x62	3,360	1
LPN-ARM/30X90/27W	27	2600	31	0.140	350x850x62	4,220	1
LPN-ARM/30X90/39W	39	3750	45	0.200	350x850x62	4,220	1
LPN-ARM/30X120/52W	52	5000	59	0.270	350x1100x62	5,080	1
LPN-ARM/30X120/92W	92	8850	104	0.475	350x1100x62	5,380	1
LPN-ARM/60X60/36W	36	3450	44	0.210	600x600x62	4,610	1
LPN-ARM/60X60/52W	52	5000	59	0.270	600x600x62	4,610	1
LPN-ARM/60X120/72W	72	6900	88	0.420	600x1100x62	6,970	1
LPN-ARM/60X120/104W	104	10.000	118	0.540	600x1100x62	6,970	1

* Measured under 230 V mains.
** Weights are measured with 1-hour emergency lighting units and panel luminaries.

WIRING DIAGRAM



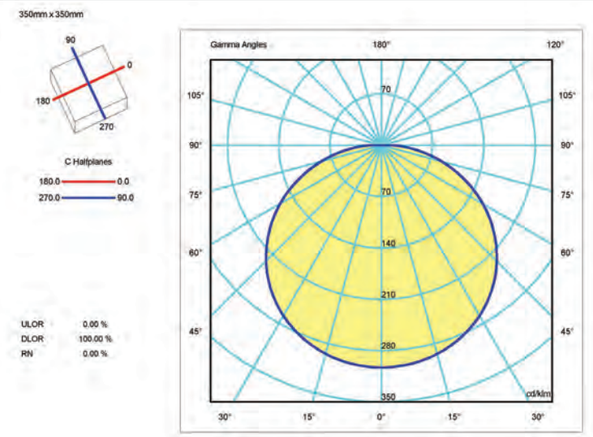
TECHNICAL DRAWING



TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	COLOR TEMPERATURE :	4000 K / 6500 K
AMBIENT TEMPERATURE (ta) :	-10 °C ... +40 °C	COLOR RENDERING INDEX :	CRI > 80
RATED DURATION :	1 / 3 h	OPTICAL EFFICACY :	97 / 115 lm/W
BATTERY CHARGING TIME :	24 / 48 h	PROTECTION CLASS :	IP20
DIFFUSER :	Opal Plexiglas	INSULATION CLASS :	I

LIGHT DISTRIBUTION CURVE



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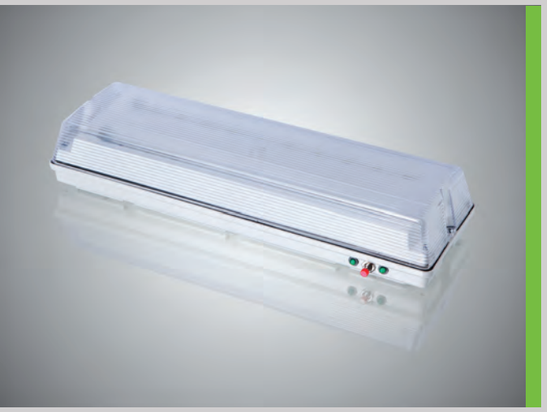
EMERGENCY LIGHTING LUMINARY LED

SOMON LED (BYPL01-LED)



- Indoor and outdoor use
- Polyamide PA6 case
- Polycarbonate glass
- Protection class IP44
- SMD LED application
- High energy saving (50%)
- Long life-time: 50,000 hours
- Emergency lighting function by interruption of the unswitched phase
- Emergency lighting function in case of low-voltage
- 1 - 3 h duration in case of emergency
- Battery charge and capacity status display with green LED
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Surface and recessed mounted
- Optional - application of 110 V operating voltage

CE RoHS LED OSRAM LED Technology included

SELV | 230 VAC 50/60 Hz | IP 44 | N6 GBR | CEM1 PCB | SMD | -|ıl|- Ni-Cd | EN 60598-2-22

In accordance with EN 60598-1, EN 60598-22.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	LIGHT SOURCE :	20 pcs SMD LED
AMBIENT TEMPERATURE (ta) :	-10 °C ... +40 °C	DIFFUSER :	Polycarbonate Glass
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 44
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	II
BATTERY TYPE :	3,6 V NiCd		

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE *	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/ EMERGENCY	TYPE of MOUNTING	BATTERY CHARGING TIME
BYPL01I-A-LED	1 / 3 h	Non-Maintained	2 W LED	- / 150 lm	Surface Mounted	24 / 48 h
BYPL01I-S-LED	1 / 3 h	Maintained	2 W LED	150 lm / 150 lm	Surface Mounted	24 / 48 h
BYPL01I-A-LED-SA	1 / 3 h	Non-Maintained	2 W LED	- / 150 lm	Recessed	24 / 48 h
BYPL01I-S-LED-SA	1 / 3 h	Maintained	2 W LED	150 lm / 150 lm	Recessed	24 / 48 h

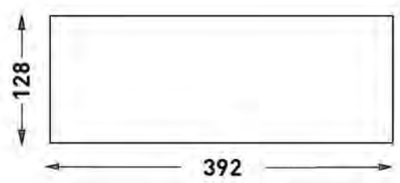
* Maintained: Lights on mains and stays alight in case of the mains failure.
Non-Maintained: Lights in case of the mains failure.

MAINS VALUES

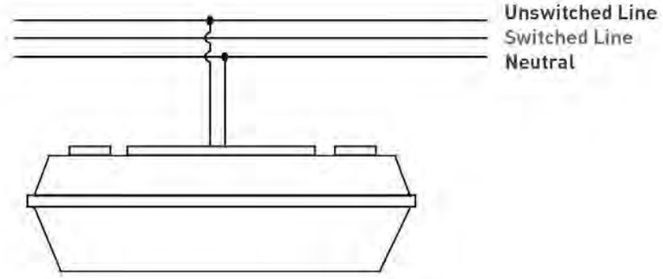
PRODUCT CODE	RATED POWER (W)	MAINS CURRENT (A)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYPL01I-A-LED / 1H	2,0	0,018	104x340x67	0,640	1
BYPL01I-A-LED / 3H	2,3	0,022	104x340x67	0,810	1
BYPL01I-S-LED/1H	7,3	0,034	104x340x67	0,690	1
BYPL01I-S-LED/3H	7,6	0,038	104x340x67	0,860	1
BYPL01I-A-LED-SA/1H	2,0	0,018	148x426x67	1,100	1
BYPL01I-A-LED-SA/3H	2,3	0,022	148x426x67	1,270	1
BYPL01I-S-LED-SA/1H	7,3	0,034	148x426x67	1,150	1
BYPL01I-S-LED-SA/3H	7,6	0,038	148x426x67	1,320	1

* Measured under 230 V mains.

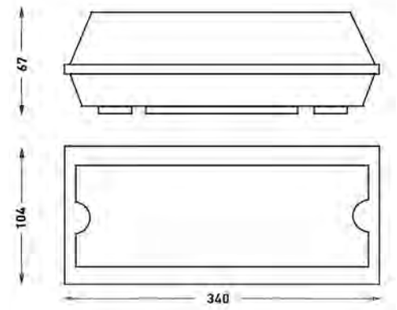
RECESSED MOUNTING HOLE SIZE



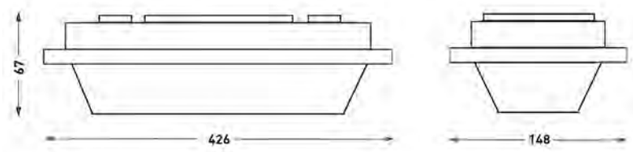
WIRING DIAGRAM



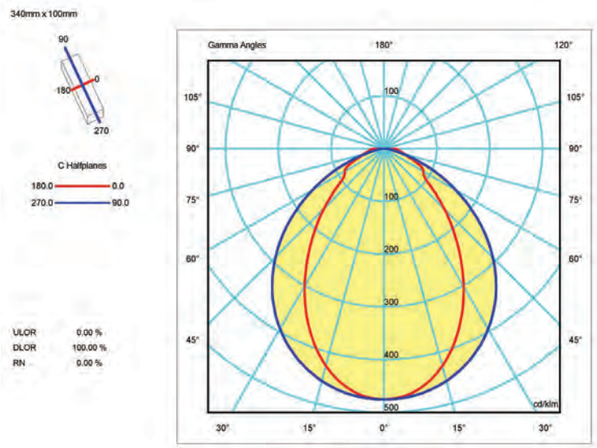
TECHNICAL DRAWING / SURFACE MOUNTED



TECHNICAL DRAWING / RECESSED MOUNTED



LIGHT DISTRIBUTION CURVE



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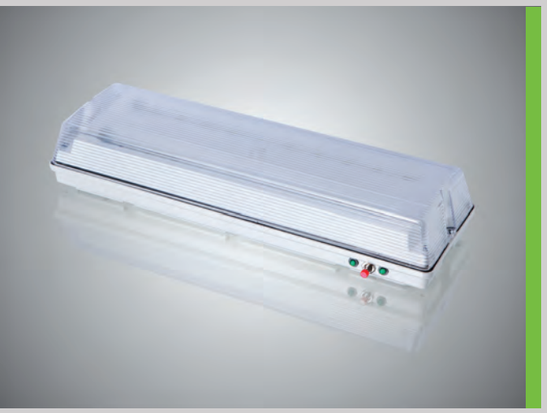
EMERGENCY LIGHTING LUMINARY LED

SOMON XLED (BYPL01-XLED)



- Indoor and outdoor use
- Polyamide PA6 case
- Polycarbonate glass
- Protection class IP44
- SMD LED application
- High energy saving (50%)
- Long life-time: 50,000 hours
- Emergency lighting function by interruption of the unswitched phase
- Emergency lighting function in case of low-voltage
- 1 - 3 h duration in case of emergency
- Battery capacity status display with green LED
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Surface and recessed mounted
- Optional - application of 110 V operating voltage

TSE CE RoHS LED OSRAM (LED Technology included)

SELV | 230 VAC 50/60 Hz | IP44 | N6 GBR | CEM1 PCB | SMD | -|||- Ni-Cd | EN 60598-2-22

In accordance with EN 60598-1 , EN 60598-22.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	LIGHT SOURCE :	20 pcs SMD LED
AMBIENT TEMPERATURE (ta) :	-10 °C ... +40 °C	DIFFUSER :	Polycarbonate Glass
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 44
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II
BATTERY TYPE :	3,6 V NiCd		

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE *	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/ EMERGENCY	TYPE of MOUNTING	BATTERY CHARGING TIME
BYPL01I-A-XLED	1 / 3 h	Non-Maintained	6 W LED	- / 250 lm	Surface Mounted	24 / 48 h
BYPL01I-S-XLED	1 / 3 h	Maintained	6 W LED	550 lm / 250 lm	Surface Mounted	24 / 48 h
BYPL01I-A-XLED-SA	1 / 3 h	Non-Maintained	6 W LED	- / 250 lm	Recessed	24 / 48 h
BYPL01I-S-XLED-SA	1 / 3 h	Maintained	6 W LED	550 lm / 250 lm	Recessed	24 / 48 h

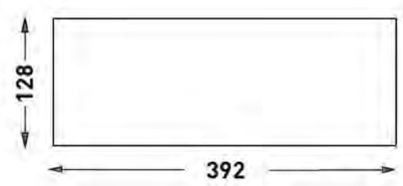
* Maintained: Lights on mains and stays alight in case of the mains failure.
Non-Maintained: Lights in case of the mains failure.

MAINS VALUES

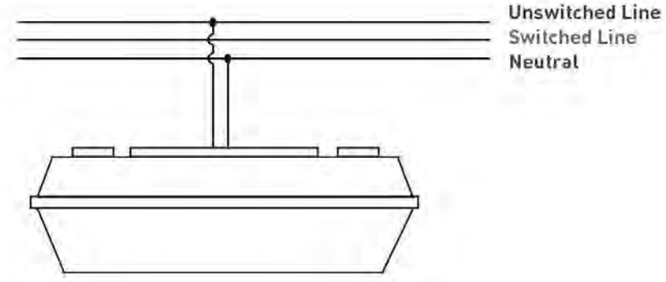
PRODUCT CODE	RATED POWER (W)	MAINS CURRENT (A)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYPL01I-A-XLED/1H	2,4	16	104x340x67	650	1
BYPL01I-A-XLED/3H	2,7	20	104x340x67	805	1
BYPL01I-S-XLED/1H	12,2	55	104x340x67	708	1
BYPL01I-S-XLED/3H	12,5	59	104x340x67	865	1
BYPL01I-A-XLED-SA/1H	2,4	16	148x426x67	1,110	1
BYPL01I-A-XLED-SA/3H	2,7	20	148x426x67	1,265	1
BYPL01I-S-XLED-SA/1H	12,2	55	148x426x67	1,168	1
BYPL01I-S-XLED-SA/3H	12,5	59	148x426x67	1,325	1

* Measured under 230 V mains.

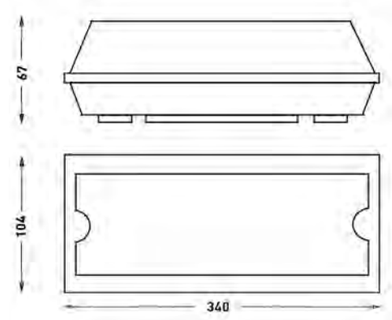
RECESSED MOUNTING HOLE SIZE



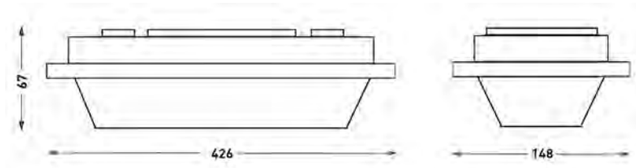
WIRING DIAGRAM



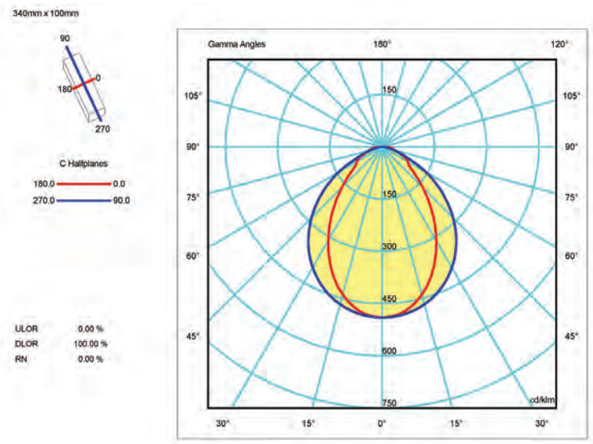
TECHNICAL DRAWING / SURFACE MOUNTED



TECHNICAL DRAWING / RECESSED MOUNTED



LIGHT DISTRIBUTION CURVE



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EMERGENCY LIGHTING LUMINARY LED

TETRA POWER

- Indoor and outdoor use
- Light and easy to carry
- 180° adjustable headlamp
- Protection class IP44
- SMD Power LED application
- High energy saving (50%)
- Emergency lighting function by interruption of the unswitched phase
- Emergency lighting function in case of low-voltage
- 3 - 6 h duration in case of emergency
- Battery charge and capacity status display with green LED
- Test switch
- Maintenance-free sealed lead acid battery
- Overcharge and deep discharge protection
- Charging circuit with constant voltage and current protection
- Wall mounted
- Optional - on/off button
- Optional - application of 110 V operating voltage

SELV · 230 VAC 50/60 Hz · IP 44 · PVC · CEM1 PCB · SMD · -lll- Lead-Acid · EN 60598-2-22

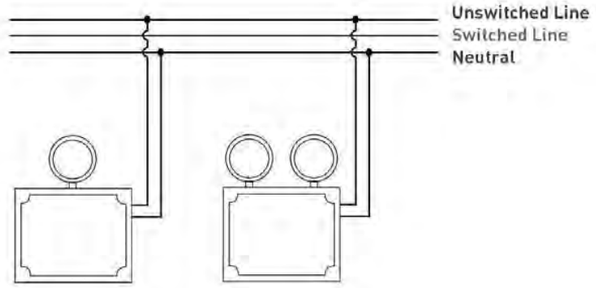
In accordance with EN 60598-1, EN 60598-22.

MAINS VALUES

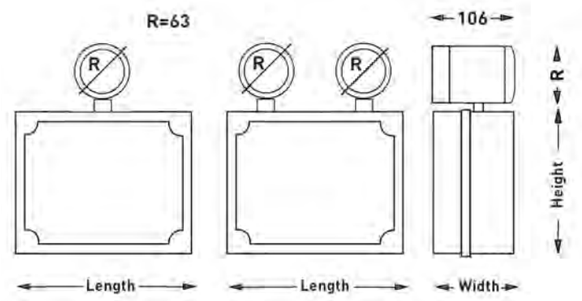
PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
AA110-PW6H	3,3 - 27,9	0,023 - 0,141	106x279x273	4,490	1
AA210-PW3H	3,3 - 27,9	0,023 - 0,141	106x279x273	4,740	1
AA210-PW6H	3,8 - 28,6	0,028 - 0,148	135x320x303	7,420	1

* Measured under 230 V mains.

WIRING DIAGRAM



TECHNICAL DRAWING



TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	HEADLAMP TYPE :	10 W LED
AMBIENT TEMPERATURE (ta) :	-10 °C ... +40 °C	CASE MATERIAL :	PVC
RATED DURATION :	3 / 6 h	PROTECTION CLASS :	IP 44
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II
BATTERY TYPE :	12 V Lead-Acid		

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE *	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/ EMERGENCY	TYPE of MOUNTING	BATTERY CHARGING TIME
AA110-PW	6 h	Non-Maintained	1x10 W LED	- / 750 lm	Surface Mounted	24 h
AA210-PW	3 / 6 h	Non-Maintained	2x10 W LED	- / 1500 lm	Surface Mounted	24 / 48 h

* Non-Maintained: Lights in case of the mains failure.

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EMERGENCY LIGHTING LUMINARY FLUORESCENT LAMP

SOMON (BYPL01)

- Indoor and outdoor use
- Polyamid PA6 case
- Polycarbonate glass
- Protection class IP44
- T5 / 8W Fluorescent tube
- Emergency lighting function by interruption of the unswitched phase
- Emergency lighting function in case of low-voltage
- 1 -3 h duration in case of emergency
- Battery charge and capacity status display with green LED
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Surface and reccesed mounted
- Optional - application of 110 V operating voltage

TL5/4P

SELV | 230 VAC 50/60 Hz | IP44 | N6 GBR | CEM1 PCB | SMD | -|ıı|- Ni-Cd | EN 60598-2-22

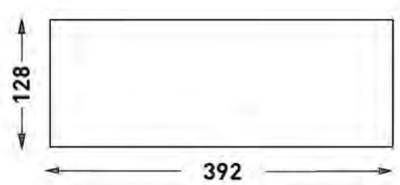
In accordance with EN 60598-1, EN 60598-22.

MAINS VALUES

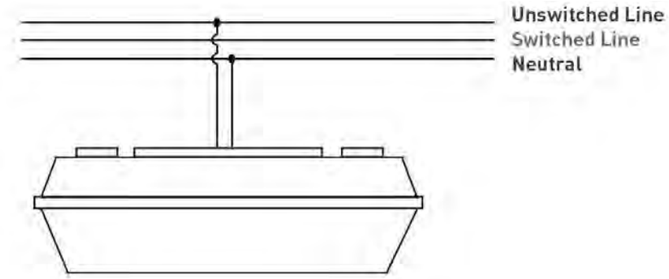
PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYPLO1-A-1X08 W/1H	1,4	0,013	104x340x89	0,620	1
BYPLO1-A-1X08 W/3H	2,1	0,015	104x340x89	0,780	1
BYPLO1-A-2X08 W/1H	2,7	0,015	104x340x89	0,960	1
BYPLO1-A-2X08 W/3H	3,5	0,018	104x340x89	1,360	1
BYPLO1-A-1X08W-SA/1H	1,4	0,013	148x426x67	1,080	1
BYPLO1-A-1X08 W-SA/3H	2,1	0,015	148x426x67	1,235	1
BYPLO1-A-2X08 W-SA/1H	2,7	0,015	148x426x67	1,420	1
BYPLO1-A-2X08 W-SA/3H	3,5	0,018	148x426x67	1,820	1
BYPLO1-S-1X08 W/1H	10,5	0,075	104x340x89	0,680	1
BYPLO1-S-1X08 W/3H	11	0,080	104x340x89	0,840	1
BYPLO1-S-2X08 W/1H	19,5	0,150	104x340x89	1,020	1
BYPLO1-S-2X08 W/3H	20	0,155	104x340x89	1,420	1
BYPLO1-S-1X08 W-SA/1H	10,5	0,075	148x426x67	1,140	1
BYPLO1-S-1X08 W-SA/3H	11	0,080	148x426x67	1,300	1
BYPLO1-S-2X08 W-SA/1H	19,5	0,150	148x426x67	1,480	1
BYPLO1-S-2X08 W-SA/3H	20	0,155	148x426x67	1,880	1

* Measured under 230 V mains.

RECESSED MOUNTING HOLE SIZE



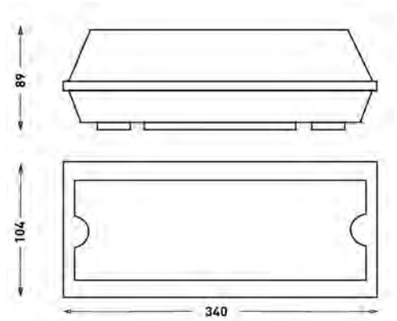
WIRING DIAGRAM



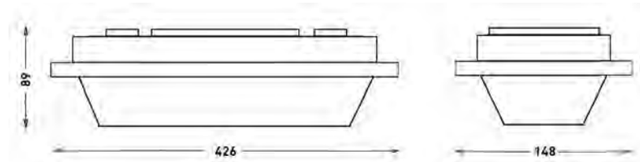
TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	LIGHT SOURCE :	8 W - T5 Fluorescent
AMBIENT TEMPERATURE (ta) :	-10 °C ... +40 °C	DIFFUSER :	Polycarbonate Glass
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 44
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II
BATTERY TYPE :	3,6 V NiCd		

TECHNICAL DRAWING / SURFACE MOUNTED



TECHNICAL DRAWING / RECESSED MOUNTED



PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE *	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/ EMERGENCY	TYPE of MOUNTING	BATTERY CHARGING TIME
BYPLO1-A-1X08 W	1 / 3 h	Non-Maintained	1x8 W - T5 Fluorescent	-/ 55 lm	Surface Mounted	24 / 48 h
BYPLO1-A-2X08 W	1 / 3 h	Non-Maintained	2x8 W - T5 Fluorescent	- / 140 lm	Surface Mounted	24 / 48 h
BYPLO1-A-1X08 W-SA	1 / 3 h	Non-Maintained	1x8 W - T5 Fluorescent	- / 55 lm	Recessed	24 / 48 h
BYPLO1-A-2X08 W-SA	1 / 3 h	Non-Maintained	2x8 W - T5 Fluorescent	- / 140 lm	Recessed	24 / 48 h
BYPLO1-S-1X08 W	1 / 3 h	Maintained	1x8 W - T5 Fluorescent	220 lm / 55 lm	Surface Mounted	24 / 48 h
BYPLO1-S-2X08 W	1 / 3 h	Maintained	2x8 W - T5 Fluorescent	380 lm / 140 lm	Surface Mounted	24 / 48 h
BYPLO1-S-1X08 W-SA	1 / 3 h	Maintained	1x8 W - T5 Fluorescent	220 lm / 55 lm	Recessed	24 / 48 h
BYPLO1-S-2X08 W-SA	1 / 3 h	Maintained	2x8 W - T5 Fluorescent	380 lm / 140 lm	Recessed	24 / 48 h

* Maintained: Lights on mains and stays alight in case of the mains failure.
Non-Maintained: Lights in case of the mains failure.

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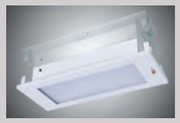
EMERGENCY LIGHTING LUMINARY FLUORESCENT LAMP

LIPSOS SAC (BYS02)



Indoor and outdoor use
Powder coated, white iron sheet case
T5 / 8W Fluorescent tube
Acrylic Plexiglas
Emergency lighting function by interruption of the unswitched phase
Emergency lighting function in case of low-voltage
1 - 3 h duration in case of emergency
Battery charge and capacity status display with green LED
Test switch
High-temperature Ni-Cd battery cells
Overcharge and deep discharge protection
Surface and recessed mounted
Optional - application of 110 V operating voltage

CE RoHS TL5/4P

SELV | 230 VAC 50/60 Hz | IP 20 | CEM1 PCB | SMD | -III- Ni-Cd | EN 60598-2-22

In accordance with EN 60598-1, EN 60598-22.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	LIGHT SOURCE :	8 W - T5 Fluorescent
AMBIENT TEMPERATURE (ta) :	-10 °C ... +40 °C	DIFFUSER :	Transparent Acrylic
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	I
BATTERY TYPE :	3,6 V NiCd		

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE *	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/ EMERGENCY	TYPE of MOUNTING	BATTERY CHARGING TIME
BYS02-A	1 / 3 h	Non-Maintained	1x8 W - T5 Fluorescent	- / 55 lm	Surface Mounted	24 / 48 h
BYS02-A/SA	1 / 3 h	Non-Maintained	1x8 W - T5 Fluorescent	- / 55 lm	Recessed	24 / 48 h
BYS02-S	1 / 3 h	Maintained	1x8 W - T5 Fluorescent	220 lm / 55 lm	Surface Mounted	24 / 48 h
BYS02-S/SA	1 / 3 h	Maintained	1x8 W - T5 Fluorescent	220 lm / 55 lm	Recessed	24 / 48 h
BYS02-ARM/BLST	-	Luminary	1x8 W - T5 Fluorescent	220 lm / -	Surface Mounted	24 / 48 h
BYS02-ARM/BLST-SA	-	Luminary	1x8 W - T5 Fluorescent	220 lm / -	Recessed	24 / 48 h

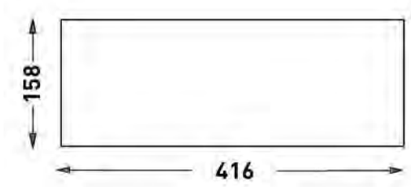
* Maintained: Lights on mains and stays alight in case of the mains failure.
Non-Maintained: Lights in case of the mains failure.

MAINS VALUES

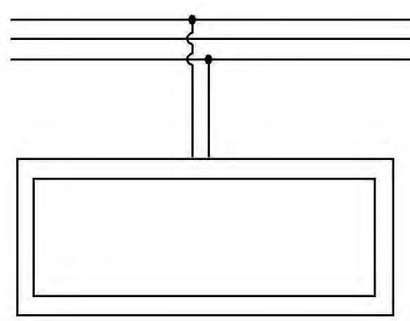
PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYS02-A/1H	1,4	0,013	72x342x142	1,400	1
BYS02-A/3H	2,1	0,015	72x342x142	1,460	1
BYS02-A/SA/1H	1,4	0,013	74x420x170	1,860	1
BYS02-A/SA/3H	2,1	0,015	74x420x170	1,920	1
BYS02-S/1H	10	0,070	72x342x142	1,500	1
BYS02-S/3H	11	0,075	72x342x142	1,660	1
BYS02-S/SA/1H	10	0,070	74x420x170	1,960	1
BYS02-S/SA/3H	11	0,075	74x420x170	2,120	1
BYS02-ARM/BLST	9	0,060	72x342x142	1,255	1
BYS02-ARM/BLST-SA	9	0,060	74x420x170	1,715	1

* Measured under 230 V mains.

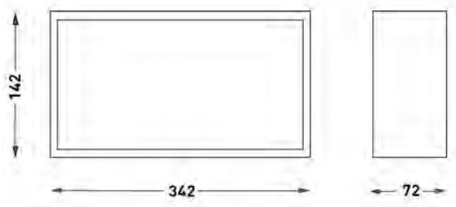
RECESSED MOUNTING HOLE SIZE



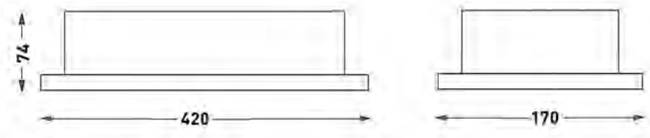
WIRING DIAGRAM



TECHNICAL DRAWING / SURFACE MOUNTED

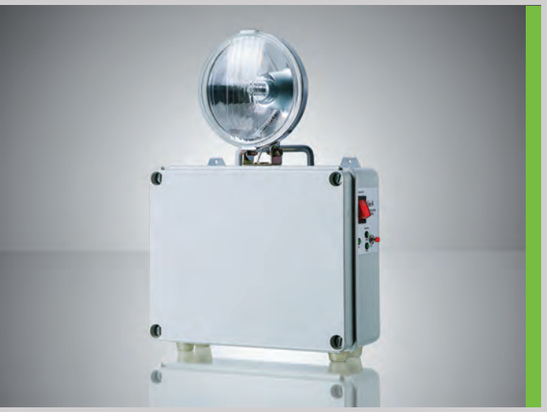


TECHNICAL DRAWING / RECESSED MOUNTED



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING LUMINARY
HALOGEN LAMP
TETRA



Indoor and outdoor use
Portable
180° adjustable halogen headlamp
Moisture -proof
Emergency lighting function by interruption of the unswitched phase
Emergency lighting function in case of low-voltage
1 - 6 h duration in case of emergency
Battery capacity status display with green LED
Lamp error status display with green LED
Test switch
Maintenance-free sealed lead acid battery
Overcharge and deep discharge protection
Charging circuit with constant voltage and current protect
Wall mounted
Optional - on/off button
Optional - application of 110 V operating voltage

CE RoHS TSE HALOGEN

SELV | 230 VAC 50/60 Hz | IP 44 | PVC | CEM1 PCB | SMD | -|ıl|- Lead-Acid | EN 60598-2-22

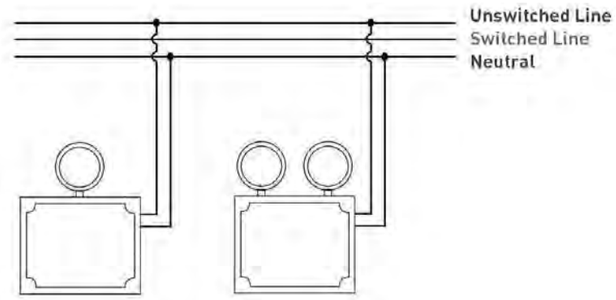
In accordance with EN 60598-1, EN 60598-22.

MAINS VALUES

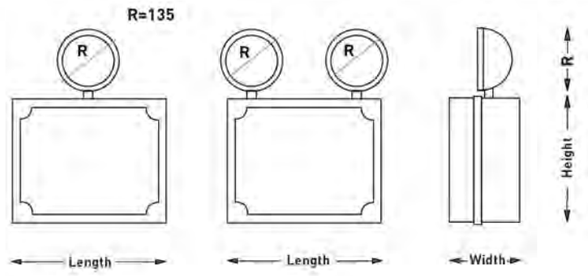
PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)**	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
AA1207-AA1Y	3,3 - 27,9	0,023 - 0,141	106x279x273	4,820	1
AA1214-AA1Y	3,8 - 28,6	0,028 - 0,148	135x320x375	7,630	1
AA1507-AA1Y	3,3 - 27,9	0,023 - 0,141	106x279x273	4,820	1
AA1514-AA1Y	4,0 - 30,6	0,030 - 0,145	135x320x375	8,570	1
AA2207-AA2Y	3,3 - 27,9	0,023 - 0,141	135x320x375	5,850	1
AA2214-AA2Y	3,8 - 28,6	0,028 - 0,148	135x320x375	7,950	1
AA2228-AA2Y	5,4 - 28,6	0,033 - 0,149	135x320x375	12,150	1
AA2514-AA2Y	3,8 - 28,6	0,028 - 0,148	135x320x375	8,420	1
AA2528-AA2Y	5,6 - 30,6	0,035 - 0,155	128x394x450	13,740	1

* Measured under 230 V mains.
** Minimum values are measured with discharged batteries and maximum values are measured with full-charged batteries.

WIRING DIAGRAM



TECHNICAL DRAWING



TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	HEADLAMP TYPE :	20 / 55 W Halogen
AMBIENT TEMPERATURE (ta) :	-10 °C ... +40 °C	CASE MATERIAL :	PVC
RATED DURATION :	1 / 6 h	PROTECTION CLASS :	IP 44
BATTERY CHARGING TIME :	24 / 96 h	INSULATION CLASS :	II
BATTERY TYPE :	12 V Lead-Acid		

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE *	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/ EMERGENCY	TYPE of MOUNTING	BATTERY CHARGING TIME
AA1207-AA1Y	3 h	Non-Maintained	1x20 W - Halogen	- / 350 lm	Surface Mounted	24 h
AA1214-AA1Y	6 h	Non-Maintained	1x20 W - Halogen	- / 350 lm	Surface Mounted	48 h
AA1507-AA1Y	1 h	Non-Maintained	1x55 W - Halogen	- / 850 lm	Surface Mounted	24 h
AA1514-AA1Y	2,5 h	Non-Maintained	1x55 W - Halogen	- / 850 lm	Surface Mounted	48 h
AA2207-AA2Y	1 h	Non-Maintained	2x20 W - Halogen	- / 700 lm	Surface Mounted	24 h
AA2214-AA2Y	3 h	Non-Maintained	2x20 W - Halogen	- / 700 lm	Surface Mounted	48 h
AA2228-AA2Y	6 h	Non-Maintained	2x20 W - Halogen	- / 700 lm	Surface Mounted	96 h
AA2514-AA2Y	1 h	Non-Maintained	2x55 W - Halogen	- / 1700 lm	Surface Mounted	48 h
AA2528-AA2Y	2,5 h	Non-Maintained	2x55 W - Halogen	- / 1700 lm	Surface Mounted	96 h

* Non-Maintained: Lights in case of the mains failure.

Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

EMERGENCY LIGHTING LUMINARY
SENSORLIGHT - LED
VATOZ LED (BYS05)

- Indoor use
- Powder coated, white iron sheet case
- Soft lighting with sanded glass
- 360° Motion sensor
- Adjustable lighting duration
- Adjustable night / day working mode
- Energy saving
- Long life-time (50.000 hours)
- 4000 K / 6500 K Color temperature
- High light intensity (450 lm)
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration in case of emergency
- Charge status display with green LED
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Wall and ceiling mounted
- Optional - application of 110 V operating voltage

CE RoHS LED OSRAM LED Technology included

SELV | 230 VAC 50/60 Hz | IP 20 | CEM1 PCB | SMD | -III- Ni-Cd | EN 60598-2-22

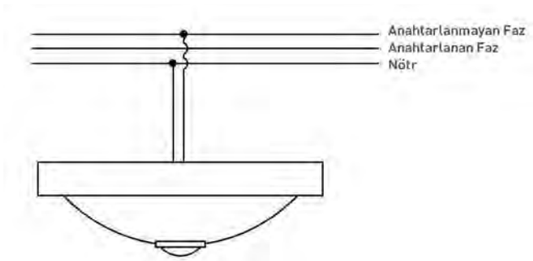
In accordance with EN 60598-1, EN 60598-22.

MAINS VALUES

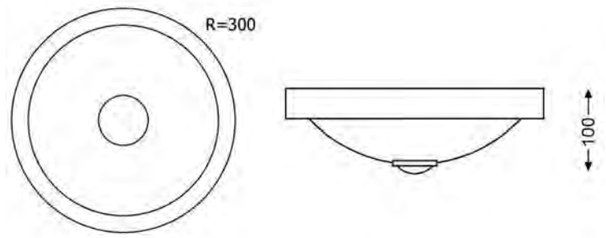
PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYS05/MSL-6W	14	0,110	300x300x100	0,910	1
BYS05-MSL-S-6W	14,5	0,170	300x300x100	1,385	1

* Measured under 230 V mains.

WIRING DIAGRAM



TECHNICAL DRAWING



TECHNICAL DATA

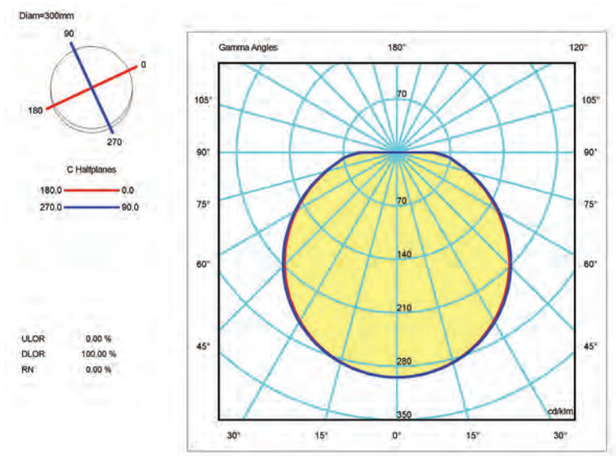
SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	SENSOR TYPE :	360° PIR Sensor
AMBIENT TEMPERATURE (ta) :	-10 °C ... +40 °C	CASE MATERIAL :	Iron Sheet
RATED DURATION :	3 h	LIGHT SOURCE :	20 pcs SMD LED
BATTERY CHARGING TIME :	24 h	PROTECTION CLASS :	IP 20
BATTERY TYPE :	7,2 V NiCd	INSULATION CLASS :	I

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE *	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/ EMERGENCY	TYPE of MOUNTING	BATTERY CHARGING TIME
BYS05/MSL-6W	-	Luminary	6 W LED	450 lm / -	Surface Mounted	-
BYS05/MSL-S-6W	3 h	Maintained	6 W LED	450 lm / 150 lm	Surface Mounted	24 h

* Maintained: Lights on mains and stays alight in case of the mains failure.

LIGHT DISTRIBUTION CURVE



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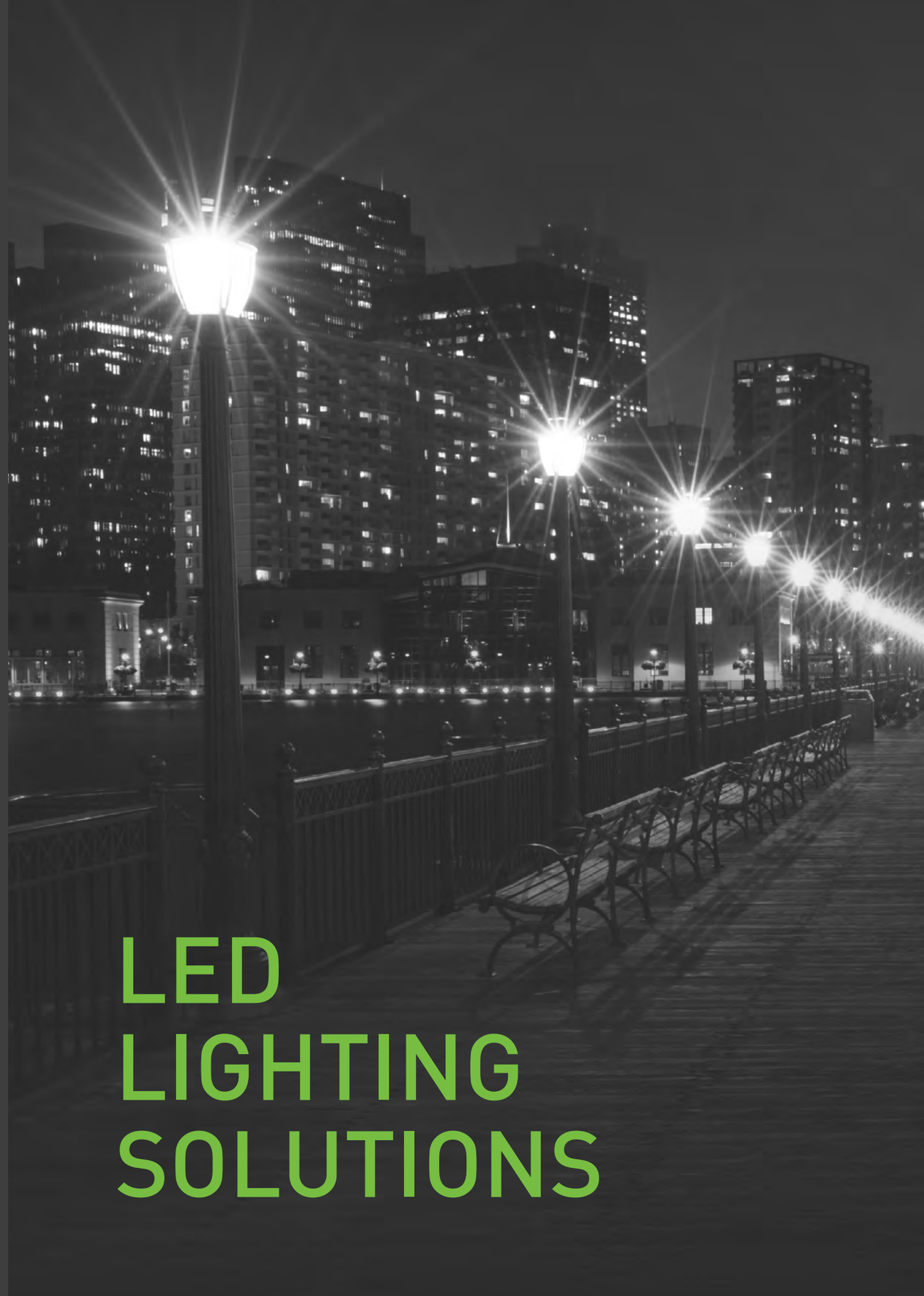


LED LIGHTING SOLUTIONS

LED LIGHTING SOLUTIONS

OVERVIEW

LED

The word LED was derived from the first letters of Light Emitting Diode. When LEDs are subjected to voltage, they emit light through the photons they radiate at the junction areas. However, contrary to other incandescent lamps or fluorescent tubes, the light LEDs emit is not formed as a result of a thermal or chemical reaction. Thus, when compared to the conventional lighting sources, LEDs have higher durability and longer life and they use the energy more efficiently.

Since LEDs do not emit high heat and they are not breakable, they are the best solutions to be implemented in locations where there are explosive liquids and gases with low activation energy. The most important feature of the LEDS that renders them unique is their ability to produce colors. LEDs are made up of various types of chemicals. The combination of the different materials defines the color of the light. They emit light in a broad spectrum, from infrared to ultraviolet.

The Advantages of LED Lighting

- Long life
- High light emitting capacity
- High efficiency
- High energy savings
- Low maintenance cost
- Various color options
- Resistance against thermal and mechanic impacts
- It is safe from poisonous gases
- Reliability
- Environment friendly

SOME OF THE TECHNICAL TERMS USED IN LIGHTING

Light Flux (Φ) [Lumen (lm)]

Light flux (Φ) is a concept related to the total amount of light emitted from a light source in a unit of time. The light flux of a light source is an energy flux emitted from this light source that is measured according to the spectral sensitivity curve of a normal eye in daytime.

Light Intensity [I - Unit: Candela (cd)]

A light source generally emits light flux (Φ) in various directions and with different intensity. The density of the light emitted towards a certain direction is referred to as the light intensity (I).

Luminosity (L - Unit: cd/m²)

Luminosity defines the intensity of light emitted towards a certain direction from the unit area of the surface.

Light Level [E - Unit: Lux (lx)]

Light level (E) is the amount of the light flux reaching the unit area of a surface in a unit of time. The light level has a value of 1 lx when 1 lm of light flux is evenly projected on a surface of 1m² (lx=lm/m²)

Color Temperature [Kelvin (K)]

Color temperature states the general color of the light source. When we describe a light source as hot or cold, what do is providing information about its Kelvin value. Low Kelvin values (e.g. 3000K) indicate hot light, whereas high Kelvin values (e.g. 8000K) indicate cold light. The daylight has a Kelvin value of 5000-6500.

CRI - (Color Rendering Index)

Color rendering is the color effect that the light generates on a colored object. The light source should ensure that the colors are perceived as they are in reality as much as possible. It is accepted that the daylight has a CRI of 100.

Luminous Efficiency (lm/W)

Luminous efficiency is also known as the efficiency factor. The luminous efficiency of the light source is the ratio of the total light flux emitted from the source to the power of the source.

Luminous efficiency; • In incandescent lamps: 12 – 15 lm/W • In halogen lamps: 18 - 22 lm/W
• In compact fluorescent lamps: 60 lm/W • In fluorescent lamps: 55 – 104 lm/W • In LEDs: it differs according to the color.

Protection Class (IP)

Protection Class is the indicator of the durability of lighting luminaries against dust, solids, water and humidity. In the international literature, it is abbreviated with the code IPX1X2. The first number in IP rating (X1) indicates the degree of protection against solids, while the second number (X2) indicates the degree of protection against humidity and water.

LED DRIVER

LED drivers are the electronic circuits that feed the LEDs. Two types of LED drivers are used in feeding the LEDs.

Constant Current LED Driver

Constant Current LED driver feeds the LEDs with 350 mA, 500 mA, 700 mA, 1050 mA and 1400 mA of constant current. LED manufacturers suggest that constant current LED drivers should be used in feeding their products in order to prevent the decrease in the life of LEDs due to the high heat caused by exposure to excess current.

Constant Voltage LED Driver

This type of LED drivers feed the LEDs under constant voltage. They are generally used in LED stick installations of 12 V, 24 V, 36 V and 48 V where constant voltage is required.

LED PANEL

LED panels are LED modules that can be designed in accordance with the desired current and voltage values by the serial, parallel or serial-parallel connection of the LEDs. They work with external LED drivers. LED panel installations provide a homogenous lighting in LED luminaries. Compared to fluorescent lamps they have a longer life and they are more energy efficient.

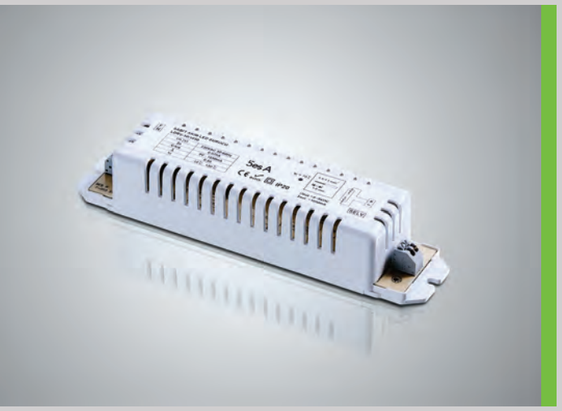
LED STICK

LED sticks are LED modules that can be designed in accordance with the desired current and voltage values by the serial, parallel or serial-parallel connection of the LEDs. They work with external LED drivers. They can be designed in the same length with a fluorescent lamp that has an equivalent power and in a way that can emit the same level of light flux. Compared to fluorescent lamps they have a longer life and they are more energy efficient.

LED LIGHTING SOLUTIONS

PRODUCTS

CONSTANT CURRENT LED DRIVER
(LDRV-10)



Constant current LED control gear
Not affected by mains voltage changes
Mains input filter and isolated output
Short-circuit, open-circuit and overload protection
Passive power factor correction
Wide voltage range
Non-flammable ABS case
Simple connectable terminal block
Compatible with emergency lighting units
Compatible with SELV or non-SELV applications
Compatible with class I and class II luminaries

SELV · 230 VAC 50/60 Hz · IP 20 · V0 ABS · CEM1 PCB · SMD · EN 61347-2-13 · LED

In accordance with EN 61347-1, EN 61347-2-13 and EN 62384.

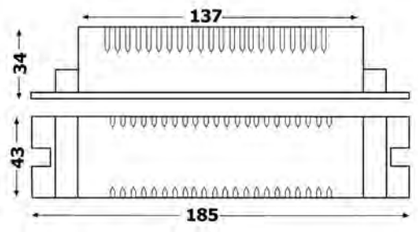
MAINS DATA

PRODUCT CODE	POWER FACTOR*	THD*	RATED POWER (W)*	MAINS CURRENT (A)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
LDRV-10/350	0,95	23%	10	0,050	43x185x34	0,105	30
LDRV-10/700	0,95	23%	12	0,060	43x185x34	0,105	30
LDRV-10/1050	0,95	24%	15	0,075	43x185x34	0,105	30

* Measured at full load under 230 V mains.

WIRING DIAGRAM

TECHNICAL DRAWING



TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	POWER FACTOR CORRECTION (PFC) :	0,95
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	TOTAL HARMONIC DISTORTION (THD) :	< 25 %
OUTPUT VOLTAGE RANGE :	6 - 21 VDC	PROTECTION CLASS :	IP 20
OUTPUT CURRENTS :	350 - 700 - 1050 mA	INSULATION CLASS :	II
MAXIMUM DRIVER EFFICIENCY :	80 %		

PRODUCT LIST

PRODUCT CODE	LED CURRENT	OUTPUT VOLTAGE RANGE	LED CURRENT TOLERANCE	NUMBER of LED	MAXIMUM OUTPUT POWER	EFFICIENCY*
LDRV-10/350	350 mA	6 - 21 VDC	± 5%	2 - 7	7.5 W	77%
LDRV-10/700	700 mA	6 - 12 VDC	± 5%	2 - 4	8.5 W	78%
LDRV-10/1050	1050 mA	6 - 9 VDC	± 5%	2 - 3	10 W	80%

* Measured at full load under 230 V mains.

Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

CONSTANT CURRENT LED DRIVER
(LDRV-50)

- Constant current LED control gear
- Not affected by mains voltage changes
- Mains input filter and isolated output
- Short-circuit, open-circuit and overload protection
- Active power factor correction
- High efficiency (up to 90%)
- Wide voltage range
- Anodized aluminum case
- Non-flammable ABS side cover
- Simple connectable terminal block
- Compatible with emergency lighting units
- Compatible with SELV or non-SELV applications
- Compatible with class I and class II luminaries

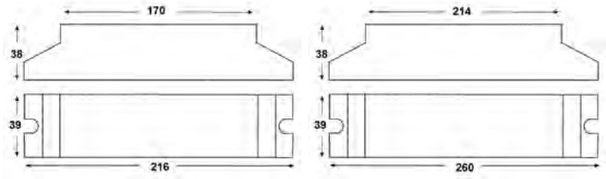
MAINS DATA

PRODUCT CODE	POWER FACTOR*	THD*	RATED POWER (W)*	MAINS CURRENT (A)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
LDRV-50/350	0,80C	30%	22	0,120	39x216x38	0,240	30
LDRV-50/500	0,85C	29%	31	0,160	39x216x38	0,240	30
LDRV-50/700	0,90C	21%	44	0,210	39x260x38	0,295	25
LDRV-50/1050	0,95	17%	59	0,270	39x260x38	0,295	25

* Measured at full load under 230 V mains.

WIRING DIAGRAM

TECHNICAL DRAWING



SELV · 230 VAC 50/60 Hz · IP 20 · V0 ABS · CEM1 PCB · SMD · 41 ALU · EN 61347-2-13

In accordance with EN 61347-1, EN 61347-2-13 and EN 62384 .

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	POWER FACTOR CORRECTION (PFC) :	0,95
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	TOTAL HARMONIC DISTORTION (THD) :	< 30 %
OUTPUT VOLTAGE RANGE :	30 - 50 VDC	PROTECTION CLASS :	IP 20
OUTPUT CURRENTS :	350 - 500 - 700 - 1050 mA	INSULATION CLASS :	I
MAXIMUM DRIVER EFFICIENCY :	90 %		

PRODUCT LIST

PRODUCT CODE	LED CURRENT	OUTPUT VOLTAGE RANGE	LED CURRENT TOLERANCE	NUMBER of LED	MAXIMUM OUTPUT POWER	EFFICIENCY*
LDRV-50/350	350 mA	30 - 50 VDC	± 10%	11 - 17	18 W	86%
LDRV-50/500	500 mA	30 - 50 VDC	± 10%	11 - 17	27 W	87%
LDRV-50/700	700 mA	30 - 50 VDC	± 5%	10 - 16	37 W	88%
LDRV-50/1050	1050 mA	30 - 50 VDC	± 5%	10 - 16	52 W	90%

* Measured at full load under 230 V mains.

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5eş A

LED PANEL
(LPN)

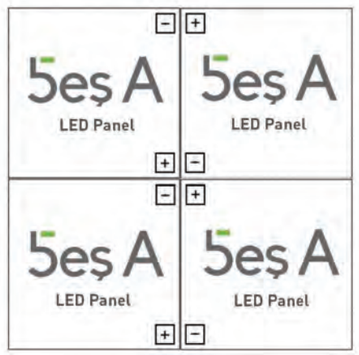
- Compatible with linear and panel lights
- Self-cooling / no additional heat sink required
- Luminous flux range between 850 - 2200 lm
- Color temperatures 4000 K and 6500 K
- Long LED life time (50.000 h)
- High luminous efficacy (115 lm / W)
- High color rendering index (CRI > 80)
- Short homogeneity distance (5,5 cm)
- Symmetrical design for multi-panel applications
- Easy installation
- Suitable for all luminaries
- Non-flammable FR4 PCB
- Simple connectable terminal block

CE RoHS LED OSRAM LED Technology included

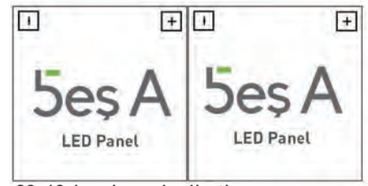
IP00 FR4 PCB SMD

In accordance with EN 62031 and EN 62471.

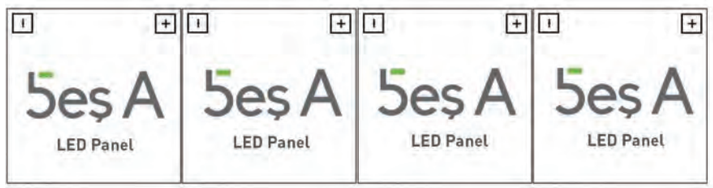
PANEL APPLICATIONS



60x60 Luminary Application



30x60 Luminary Application



30x120 Luminary Application

PANEL HOLE SIZES

	A (mm)	B (mm)	a (mm)	b (mm)	c (mm)	d (mm)
LPN-2509E5	250	250	26.2	26.2	57.4	43
LPN-2513E5	250	250	26.2	26.2	57.4	43
LPN-2520E5	250	250	31.2	31.2	62.4	48
LPN-2523E5	250	250	35	22.6	72	23
LPN-2709E5	270	270	33.8	33.8	67.6	52
LPN-2713E5	270	270	33.8	33.8	67.6	52
LPN-2720E5	270	270	38.8	38.8	72.6	57
LPN-2723E5	270	270	42.6	30.2	82	32

TECHNICAL DATA

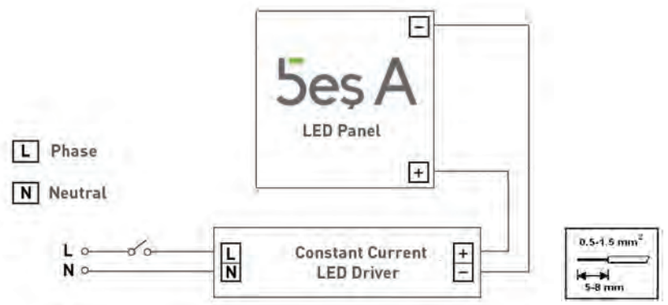
SUPPLY VOLTAGE :	12,4 V - 22 V - 40 V	COLOR RENDERING INDEX (CRI) :	CRI > 80
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	LUMINOUS EFFICACY :	97-115 lm / W (min)
COLOR TEMPERATURE :	4000 K - 6500 K	PROTECTION CLASS :	IP 00

PRODUCT LIST

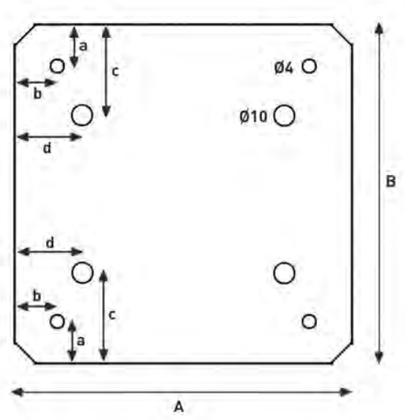
PRODUCT CODE	SUPPLY VOLTAGE (VDC)	PANEL DRIVING CURRENT (mA) *	PANEL LIGHT POWER (W)	TOTAL LUMINOUS FLUX (lm)	HOMOGENEITY DISTANCE (mm) **	DIMENSIONS (mm)	WEIGHT (kg)
LPN-2509E5	12,4	700	9	850	55	250 x 250	0,180
LPN-2513E5	12,4	1050	13	1250	55	250 x 250	0,180
LPN-2520E5	40	500	20	1900	55	250 x 250	0,180
LPN-2523E5	22	1050	23	2200	55	250 x 250	0,180
LPN-2709E5	12,4	700	9	850	55	270 x 270	0,230
LPN-2713E5	12,4	1050	13	1250	55	270 x 270	0,230
LPN-2720E5	40	500	20	1900	55	270 x 270	0,230
LPN-2723E5	22	1050	23	2200	55	270 x 270	0,230

* LED panels must be driven by constant current LED drivers.
** Homogeneity distance was measured with 1,5 mm opal Plexiglas.

WIRING DIAGRAM



TECHNICAL DRAWING



Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

LED E-PANEL
(LPN/E)

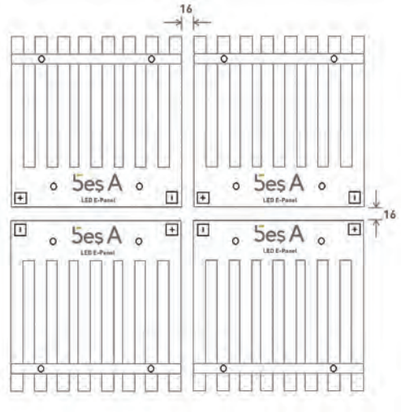
- Compatible with linear and panel lights
- Self-cooling / no additional heat sink required
- Luminous flux range between 850 - 2200 lm
- Color temperatures 4000 K and 6500 K
- Long LED life time (50.000 h)
- High luminous efficacy (115 lm / W)
- High color rendering index (CRI > 80)
- Short homogeneity distance (5,5 cm)
- Symmetrical design for multi-panel applications
- Easy installation
- Suitable for all luminaries
- Non-flammable FR4 PCB
- Simple connectable terminal block

LED Technology included

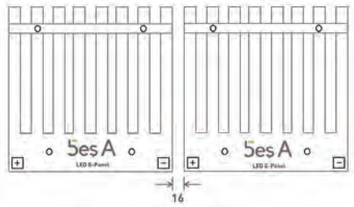
IP 00 | FR4 PCB | SMD

In accordance with EN 62031 and EN 62471

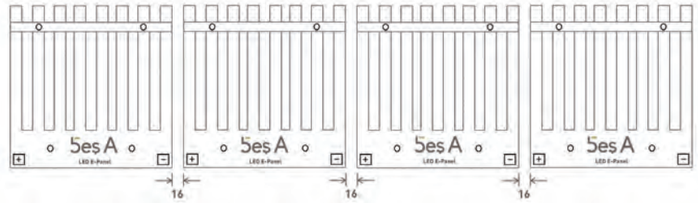
PANEL APPLICATIONS



60x60 Luminary Application

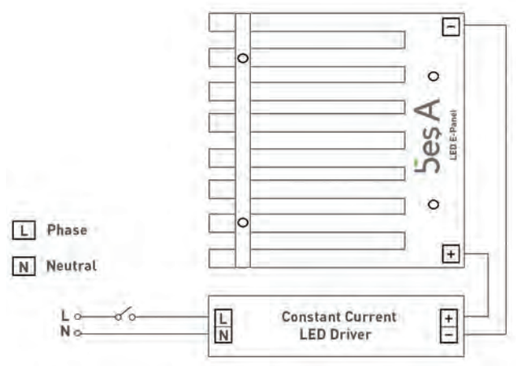


30x60 Luminary Application

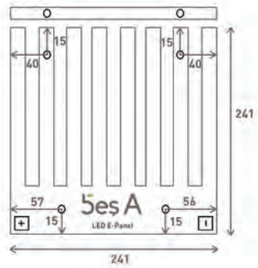


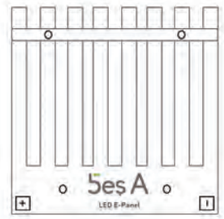
30x120 Luminary Application

WIRING DIAGRAM



TECHNICAL DRAWING





TECHNICAL DATA

SUPPLY VOLTAGE :	12.4 V - 34 V	COLOR RENDERING INDEX (CRI) :	CRI > 80
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	LUMINOUS EFFICACY :	115 lm / W (min)
COLOR TEMPERATURE :	4000 K - 6500 K	PROTECTION CLASS :	IP 00

PRODUCT LIST

PRODUCT CODE	SUPPLY VOLTAGE (VDC)	PANEL DRIVING CURRENT (mA) *	PANEL LIGHT POWER (W)	TOTAL LUMINOUS FLUX (lm)	HOMOGENEITY DISTANCE (mm) **	DIMENSIONS (mm)	WEIGHT (kg)
LPN/E-2409E5	12,4	700	9	850	55	240 x 240	0,090
LPN/E-2413E5	12,4	1050	13	1250	55	240 x 240	0,090
LPN/E-2417E5	34	500	17	1600	55	240 x 240	0,090

* LED panels must be driven by constant current LED drivers.
** Homogeneity distance was measured with 1,5 mm opal Plexiglas.

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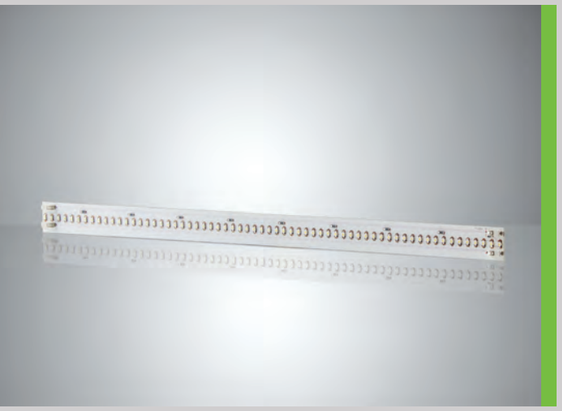
LED STICK
(LST)



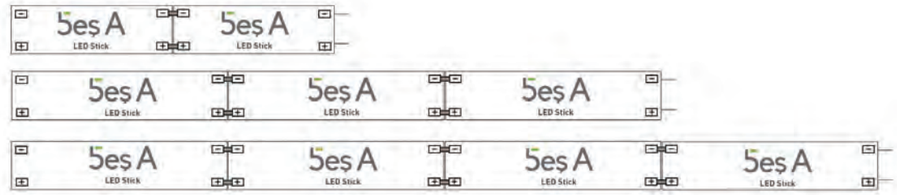
Compatible for LED fluorescent tube
Same length with equivalent fluorescent lamp
Self-cooling / no additional heat sink required
Luminous flux range between 355 - 1250 lm
Color temperatures 4000 K and 6500 K
Long LED life time (50.000 h)
High luminous efficacy (115 lm / W)
High color rendering index (CRI > 80)
High energy savings (50 %)
Suitable for all luminaries
Easy installation
Non-flammable FR4 PCB material
Simple connectable terminal block

OSRAM
LED Technology included

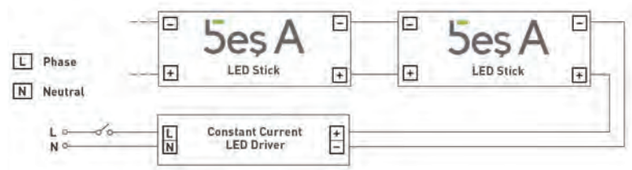
IP 00 · FR4 PCB · SMD

In accordance with EN 62031 and EN 62471.

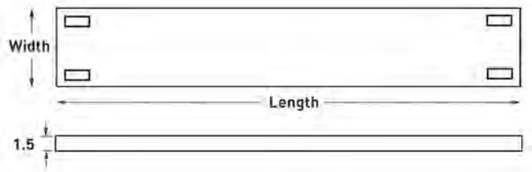
STICK APPLICATIONS



WIRING DIAGRAM



TECHNICAL DRAWING



TECHNICAL DATA

SUPPLY VOLTAGE :	9,3 V - 46,5 V	COLOR RENDERING INDEX (CRI) :	CRI > 80
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	LUMINOUS EFFICACY :	97-115 lm / W
COLOR TEMPERATURE :	4000 K - 6500 K	PROTECTION CLASS :	IP 00

PRODUCT LIST

PRODUCT CODE	FLUORESCENT EQUIVALENT*	SUPPLY VOLTAGE (Vdc)	STICK DRIVING CURRENT (mA)**	LED STICK LIGHT POWER (W)	LED STICK LUMINOUS FLUX (lm)	DIMENSIONS (mm)	WEIGHT (kg)
LST-2703E3	18 W - T8 (2)	9.3	350	3,25	355	20 x 273	0,022
LST-3805E3	36 W - T8 (3)	22	235	5,17	565	20 x 384	0,031
LST-3606E3	58 W - T8 (4)	22	265	5,83	640	20 x 364	0,030
LST-2706E5	18 W - T8P (2)	22	250	5,5	605	20 x 273	0,025
LST-3808E5	36 W - T8P (3)	22	350	7,7	845	20 x 384	0,035
LST-3811E5	54 W - T5 (3)	46.5	235	10,92	1200	20 x 378	0,027
LST-2611E5	80 W - T5 (4)	43	265	11,39	1250	20 x 361	0,026

* In order to achieve the equivalent of LED fluorescents with LED sticks, the amount given in ( ) must be used.
** LED sticks must be driven by constant current LED drivers.

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ELECTRONIC BALLAST & ELECTRONIC TRANSFORMER

ELECTRONIC BALLAST & ELECTRONIC TRANSFORMER

OVERVIEW

ELECTRONIC BALLAST & ELECTRONIC TRANSFORMER
OVERVIEW

BALAST

Ballast is the device connected between the lamp and the main power for limiting or regulating the current of the discharge lamps by means of inductance, capacity or resistance. Ballasts can either be made up of any one of the resistance, inductance or capacity elements or they may have a structure comprised of several of these elements and most of the auxiliary elements including transformers, cold igniters and interference reducers.

A good ballast circuit must have the following characteristics:

- It must not lead to a high power loss
- It must ensure that the lamp illuminates at full power
- It must work without noise
- It must not cause radio interference
- It must not distort the current wave
- It must have a structure that can ignite the lamp easily
- It must be durable
- It must not overheat

Ballast loss is one of the important factors that affect the efficiency of the system. The ballasts used in fluorescent lamps are subjected to an energy classification.

The energy classification of the ballasts:

A1: Electronic ballast that can be dimmed
A2: Electronic ballast with low loss
A3: Standard electronic ballast
B1: Magnetic ballast with extra low loss
B2: Magnetic ballast with low loss
C: Magnetic ballast with normal loss
D: Magnetic ballast with high loss

BALLAST TYPES

There are two types of ballasts:

Magnetic Ballast

Magnetic ballast is the oldest and the most conventional ballast type. Its use has been decreasing rapidly day by day. Basically it consists of elements such as copper coil and siliceous sheet and it generally has a simple structure without any electronic components.

Electronic Ballast

Electronic ballast can be analyzed under two main categories as hot ignition and cold ignition. Hot ignition ballast can increase the life of the lamp significantly by means of ignition after heating the cathodes for a while before igniting the lamp.

ADVANTAGES OF ELECTRONIC BALLAST OVER MAGNETIC BALLAST

Electronic ballasts are at minimum 35% more efficient during their life than magnetic ballasts and they provide savings for years due to this difference in the consumption.

Energy Savings

Electronic ballasts create the required operating parameters for fluorescent lamps by using less energy compared to magnetic ballasts due to their functioning in high frequencies.

Long Lamp Life

The lamp life is related more to the on-off count than to the catalogue value. When the on-off count rises, a decline in the light flux of the lamp occurs and the lamp life decreases accordingly. An electronic ballast lights the lamp without force by heating the filaments before providing a controlled current. Thus, the life of the lamps operating with electronic ballasts is 20% - 50% longer than the lamps that are subjected to the uncontrolled current caused by magnetic ballasts.

Trouble-free Ignition

Lamps that use electronic ballasts light up immediately and without flickering. With electronic ballasts, the ignition problems associated with the use of magnetic ballasts disappear.

High Power Factor

The power factor, which is at the level of 0.5-0.6 in magnetic ballasts is above 0.95 in electronic ballasts with filter circuits. Electronic ballasts do not require compensation capacitors, since they do not absorb reactive power from the network.

ELECTRONIC BALLAST & ELECTRONIC TRANSFORMER

PRODUCTS

24 V ELECTRONIC BALLAST
(EB-V24)

Silent and vibration-free lighting
Prolonging the life of the lamp with warm-start
Wide voltage range
Isolated output
Open circuit and short circuit protection
High voltage protection (>30V)
Non-flammable ABS case
Non-flammable CEM1 PCB material
Simple connectable terminal block
Operate 24 V AC/DC

CE RoHS TL-D/4P TL5/4P PL-L/4P

IP 20 | 24 V AC/DC | V0 ABS | CEM1 PCB | SMD | EN 61347-2-3

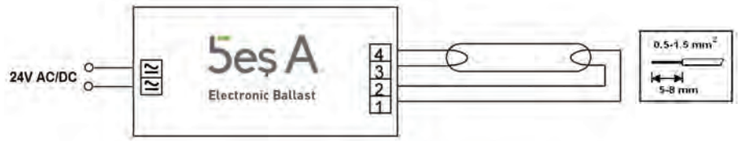
In accordance with EN 61347-1, EN 61347-2-3 ande EN 60929.

PRODUCT LIST

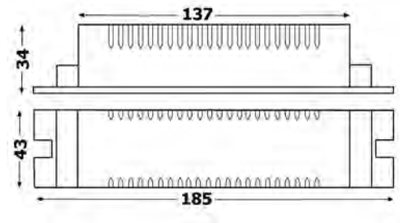
PRODUCT CODE	FLUORESCENT LAMP	POWER FACTOR*	RATED POWER(W)*	MAINS CURRENT (A)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EB-V24-T8/11536	1 x 18 W-T8	0,75	16	1,05	43x185x34	0,130	30
EB-V24-T8/11536	1 x 36 W-T8	0,75	22	1,40	43x185x34	0,130	30
EB-V24-T5/10824	1 x 8 W-T5	0,75	13	0,85	43x185x34	0,130	30
EB-V24-T5/10824	1 x 14 W-T5	0,75	17	1,10	43x185x34	0,130	30
EB-V24-T5/10824	1 x 21 W-T5	0,75	21	1,35	43x185x34	0,130	30
EB-V24-T5/10824	1 x 24 W-T5	0,75	20	1,30	43x185x34	0,130	30
EB-V24-PLL/11136	1 x 11 W-PLL	0,75	17	1,10	43x185x34	0,130	30
EB-V24-PLL/11136	1 x 18 W-PLL	0,75	17	1,05	43x185x34	0,130	30
EB-V24-PLL/11136	1 x 24 W-PLL	0,75	20	1,20	43x185x34	0,130	30
EB-V24-PLL/11136	1 x 36 W-PLL	0,75	22	1,40	43x185x34	0,130	30

* Measured under 24 VAC

WIRING DIAGRAM



TECHNICAL DRAWING

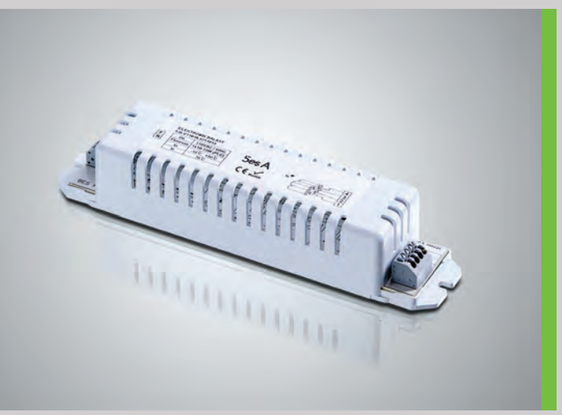


TECHNICAL DATA

SUPPLY VOLTAGE :	24 VAC/DC	OPERATING FREQUENCY :	45 kHz
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	DEFINED WARM START :	< 0,5 s
MAX. CASE TEMPERATURE (tc) :	70 °C	PROTECTION CLASS :	IP 20
BALLAST LUMEN FACTOR (BLF) :	> 75 %	INSULATION CLASS :	II

Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

110 V ELECTRONIC BALLAST
(EB-V110)



- Silent and vibration-free lighting
- Prolonging the life of the lamp with warm-start
- Wide voltage range
- Open circuit protection
- Low mains current
- Compatible with emergency lighting units
- Non-flammable ABS case
- Non-flammable CEM1 PCB material
- Simple connectable terminal block
- Operate 110 V AC/DC

TL-D/4P TL5/4P PL-L/4P PL-T/C/4P

IP 20 | 110 VAC 50/60 Hz | EEI=A3 | V0 ABS | CEM1 PCB | SMD | EN 61347-2-3

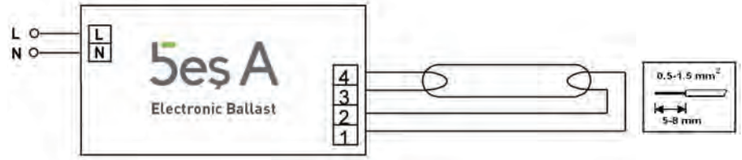
In accordance with EN 61347-1, EN 61347-2-3.

PRODUCT LIST

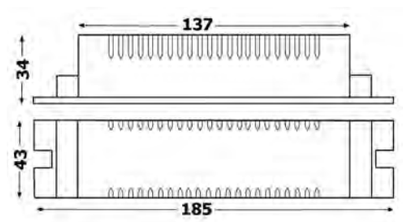
PRODUCT CODE	FLUORESCENT LAMP	POWER FACTOR*	RATED POWER(W)*	MAINS CURRENT (A)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EB-V110-T8/11518	1 x 15W-T8	0,68	9	0,115	43x185x34	0,115	30
EB-V110-T8/11518	1 x 18W-T8	0,68	10	0,125	43x185x34	0,115	30
EB-V110-T8/13036	1 x 30W-T8	0,68	21	0,280	43x185x34	0,115	30
EB-V110-T8/13036	1 x 36W-T8	0,68	22	0,305	43x185x34	0,115	30
EB-V110-T8/158	1 x 58W-T8	0,68	28	0,390	43x185x34	0,115	30
EB-V110-T5/10608	1 x 8W-T5	0,68	5	0,065	43x185x34	0,115	30
EB-V110-T5/11314	1 x 14W-T5	0,68	10	0,135	43x185x34	0,115	30
EB-V110-T5/121	1 x 21W-T5	0,68	14	0,180	43x185x34	0,115	30
EB-V110-T5/124	1 x 24W-T5	0,68	15	0,195	43x185x34	0,115	30
EB-V110-T5/128	1 x 28W-T5	0,68	20	0,265	43x185x34	0,115	30
EB-V110-T5/139	1 x 39W-T5	0,68	26	0,360	43x185x34	0,115	30
EB-V110-T5/154	1 x 54W-T5	0,68	37	0,500	43x185x34	0,115	30
EB-V110-PLL/111	1 x 11W-PLL	0,68	7	0,090	43x185x34	0,115	30
EB-V110-PLL/11824	1 x 18W-PLL	0,68	10	0,130	43x185x34	0,115	30
EB-V110-PLL/11824	1 x 24W-PLL	0,68	13	0,175	43x185x34	0,115	30
EB-V110-PLL/136	1 x 36W-PLL	0,68	22	0,305	43x185x34	0,115	30
EB-V110-PLL/155	1 x 55W-PLL	0,68	31	0,425	43x185x34	0,115	30
EB-V110-PLC/11013	1 x 13W-PLC	0,68	6	0,090	43x185x34	0,115	30
EB-V110-PLC/118	1 x 18W-PLC	0,68	11	0,150	43x185x34	0,115	30
EB-V110-PLC/126	1 x 26W-PLC	0,68	15	0,190	43x185x34	0,115	30

* Measured under 110 V mains.

WIRING DIAGRAM



TECHNICAL DRAWING

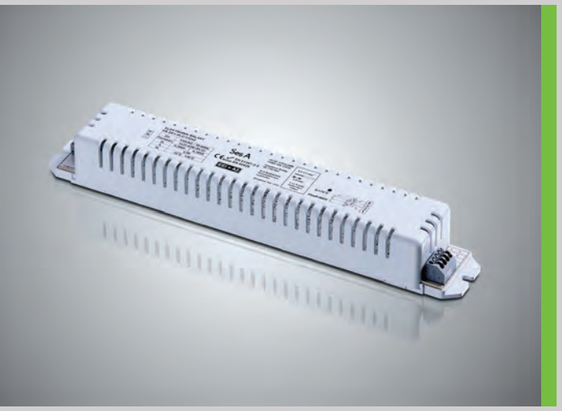


TECHNICAL DATA

SUPPLY VOLTAGE :	110 VAC 50 / 60 Hz	OPERATING FREQUENCY :	30-50 kHz
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	DEFINED WARM START :	< 0,5 s
MAX. CASE TEMPERATURE (tc) :	70 °C	PROTECTION CLASS :	IP 20
ENERGY EFFICIENCY INDEX :	EEI = A3	INSULATION CLASS :	II
BALLAST LUMEN FACTOR (BLF)	> 75 %		

Beş A reserves the right to change the technical and visual specifications and/or to discontinue the products without prior notice.

110V DIGITAL ELECTRONIC BALLAST
(EB-DF1)



- Silent and vibration-free lighting
- Prolonging the life of the lamp with warm-start
- Protection of defective lamps and at end of lamp life
- Automatic start after replacement of defective lamps
- Voltage guard (overvoltage indication and under voltage shutdown)
- Constant luminous flux
- Mains input line filter
- Active power factor correction
- Compatible with emergency lighting units
- Non-flammable ABS case
- Non-flammable CEM1 PCB material
- Simple connectable terminal block
- Compatible with luminaries for protection class I and protection class II
- Ignite one lamp within multi-lamp application
- Operate 110 V AC/DC

CE RoHS TL-D/4P TL5/4P PL-L/4P PL-T/C/4P

IP 20 | 110 VAC 50/60 Hz | EEI=A2 | V0 ABS | CEM1 PCB | SMD | EN 61347-2-3

In accordance with EN 61347-1, EN 61347-2-3, EN 60929.

TECHNICAL DATA

SUPPLY VOLTAGE :	110 VAC 50 / 60 Hz	DEFINED WARM START :	t_i < 2s
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	CREST FACTOR :	CF < 1,7
MAX. CASE TEMPERATURE (tc) :	70 °C	TOTAL HARMONIC DISTORTION (THD) :	THD < 10 %
ENERGY EFFICIENCY INDEX :	EEI = A2	PROTECTION CLASS :	IP 20
BALLAST LUMEN FACTOR (BLF) :	BLF > 85 %	INSULATION CLASS :	II
OPERATING FREQUENCY :	45-55 kHz		

PRODUCT LIST

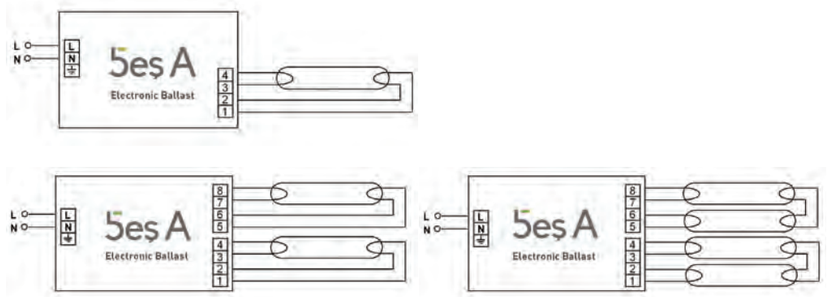
PRODUCT CODE	FLUORESCENT LAMP	POWER FACTOR*	RATED POWER (W) *	MAINS CURRENT (A) *	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EB-DF1-T8/11518	1 x 15W-T8	0,98	15	0,135	42x264x34	0,205	25
EB-DF1-T8/11518	1 x 18W-T8	0,98	15	0,140	42x264x34	0,205	25
EB-DF1-T8/13036	1 x 30W-T8	0,99	32	0,295	42x264x34	0,205	25
EB-DF1-T8/13036	1 x 36W-T8	0,99	33	0,300	42x264x34	0,205	25
EB-DF1-T8/158	1 x 58W-T8	0,99	55	0,495	42x264x34	0,215	25
EB-DF1-T8/21518	2 x 15W-T8	0,97	30	0,140	42x264x34	0,250	25
EB-DF1-T8/21518	2 x 18W-T8	0,97	32	0,150	42x264x34	0,250	25
EB-DF1-T8/23036	2 x 30W-T8	0,99	60	0,270	42x264x34	0,250	25
EB-DF1-T8/23036	2 x 36W-T8	0,99	62	0,280	42x264x34	0,250	25

PRODUCT LIST (Con't)

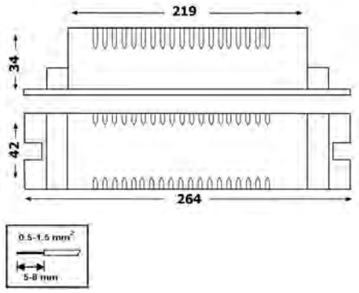
PRODUCT CODE	FLUORESCENT LAMP	POWER FACTOR*	RATED POWER(W)*	MAINS CURRENT (A)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EB-DF1-T8/41518	4 x 15W-T8	0,99	64	0,570	42x264x34	0,255	25
EB-DF1-T8/41518	4 x 18W-T8	0,99	70	0,615	42x264x34	0,255	25
EB-DF1-T5/10608	1 x 6W-T5	0,97	11	0,105	42x264x34	0,205	25
EB-DF1-T5/10608	1 x 8W-T5	0,98	15	0,135	42x264x34	0,205	25
EB-DF1-T5/11314	1 x 14W-T5	0,99	22	0,200	42x264x34	0,205	25
EB-DF1-T5/121	1 x 21W-T5	0,99	23	0,205	42x264x34	0,205	25
EB-DF1-T5/124	1 x 24W-T5	0,99	24	0,215	42x264x34	0,205	25
EB-DF1-T5/12835	1 x 28W-T5	0,99	29	0,265	42x264x34	0,205	25
EB-DF1-T5/12835	1 x 35W-T5	0,99	34	0,305	42x264x34	0,205	25
EB-DF1-T5/139	1 x 39W-T5	0,99	41	0,370	42x264x34	0,205	25
EB-DF1-T5/149	1 x 49W-T5	0,99	50	0,410	42x264x34	0,210	25
EB-DF1-T5/154	1 x 54W-T5	0,99	52	0,465	42x264x34	0,210	25
EB-DF1-T5/180	1 x 80W-T5	0,99	73	0,670	42x264x34	0,210	25
EB-DF1-T5/20608	2 x 6W-T5	0,99	22	0,190	42x264x34	0,245	25
EB-DF1-T5/20608	2 x 8W-T5	0,99	30	0,250	42x264x34	0,245	25
EB-DF1-T5/21314	2 x 13W-T5	0,99	43	0,395	42x264x34	0,245	25
EB-DF1-T5/21314	2 x 14W-T5	0,99	44	0,400	42x264x34	0,245	25
EB-DF1-T5/221	2 x 21W-T5	0,99	43	0,395	42x264x34	0,255	25
EB-DF1-T5/224	2 x 24W-T5	0,99	47	0,425	42x264x34	0,255	25
EB-DF1-T5/22835	2 x 28W-T5	0,99	58	0,520	42x264x34	0,255	25
EB-DF1-T5/22835	2 x 35W-T5	0,99	69	0,625	42x264x34	0,255	25
EB-DF1-T5/239	2 x 39W-T5	0,99	78	0,700	42x264x34	0,255	25
EB-DF1-T5/41314	4 x 13W-T5	0,99	56	0,515	42x264x34	0,255	25
EB-DF1-T5/41314	4 x 14W-T5	0,99	58	0,530	42x264x34	0,255	25
EB-DF1-PLL/111	1 x 11W-PLL	0,99	16	0,145	42x264x34	0,205	25
EB-DF1-PLL/11824	1 x 18W-PLL	0,99	18	0,175	42x264x34	0,205	25
EB-DF1-PLL/11824	1 x 24W-PLL	0,99	23	0,205	42x264x34	0,205	25
EB-DF1-PLL/136	1 x 36W-PLL	0,99	37	0,330	42x264x34	0,205	25
EB-DF1-PLL/155	1 x 55W-PLL	0,99	55	0,505	42x264x34	0,210	25
EB-DF1-PLL/211	2 x 11W-PLL	0,99	31	0,270	42x264x34	0,245	25
EB-DF1-PLL/218	2 x 18W-PLL	0,99	35	0,315	42x264x34	0,245	25
EB-DF1-PLL/224	2 x 24W-PLL	0,99	47	0,430	42x264x34	0,245	25
EB-DF1-PLL/236	2 x 36W-PLL	0,99	72	0,640	42x264x34	0,250	25
EB-DF1-PLC/113	1 x 13W-PLC	0,99	20	0,190	42x264x34	0,205	25
EB-DF1-PLC/118	1 x 18W-PLC	0,99	22	0,200	42x264x34	0,205	25
EB-DF1-PLC/126	1 x 26W-PLC	0,99	28	0,255	42x264x34	0,205	25
EB-DF1-PLC/13242	1 x 32W-PLC	0,99	30	0,280	42x264x34	0,205	25
EB-DF1-PLC/13242	1 x 42W-PLC	0,99	42	0,385	42x264x34	0,205	25
EB-DF1-PLC/213	2 x 13W-PLC	0,99	40	0,360	42x264x34	0,245	25
EB-DF1-PLC/218	2 x 18W-PLC	0,99	44	0,405	42x264x34	0,245	25
EB-DF1-PLC/226	2 x 26W-PLC	0,99	57	0,520	42x264x34	0,245	25
EB-DF1-PLC/23242	2 x 32W-PLC	0,99	61	0,555	42x264x34	0,250	25
EB-DF1-PLC/23242	2 x 42W-PLC	0,99	79	0,720	42x264x34	0,250	25

* Measured under 110 V mains.

WIRING DIAGRAM



TECHNICAL DRAWING



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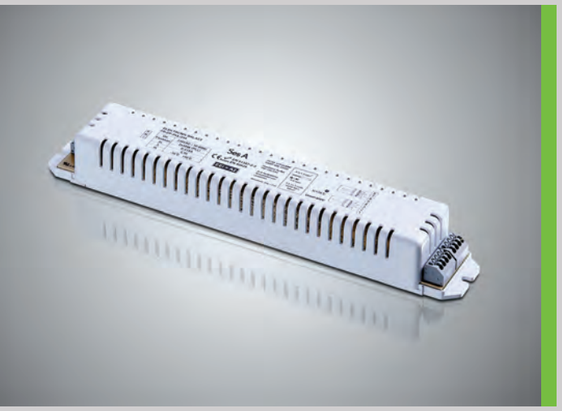
DIGITAL ELECTRONIC BALLAST
(EB-DF)



- Silent and vibration-free lighting
- Prolonging the life of the lamp with warm-start
- Protection of defective lamps and at end of lamp life
- Automatic start after replacement of defective lamps
- Voltage guard (overvoltage indication and under voltage shutdown)
- Constant luminous flux
- Mains input line filter
- Active power factor correction
- Compatible with emergency lighting units
- Non-flammable ABS case
- Non-flammable CEM1 PCB material
- Simple connectable terminal block
- Compatible with luminaries for protection class I and protection class II
- Ignite one lamp within multi-lamp application
- Operate 230 V AC/DC

CE RoHS TL-D/4P TL5/4P PL-L/4P PL-T/C/4P

IP 20 | 230 VAC 50/60 Hz | EEI=A2 | V0 ABS | CEM1 PCB | SMD | EN 61347-2-3

In accordance with EN 61347-1, EN 61347-2-3, EN 60929.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	DEFINED WARM START :	t_i < 2s
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	CREST FACTOR :	CF < 1,7
MAX. CASE TEMPERATURE (tc) :	70 °C	TOTAL HARMONIC DISTORTION (THD) :	THD < 10 %
ENERGY EFFICIENCY INDEX :	EEI = A2	PROTECTION CLASS :	IP 20
BALLAST LUMEN FACTOR (BLF) :	BLF > 85 %	INSULATION CLASS :	II
OPERATING FREQUENCY :	45 - 55 kHz		

PRODUCT LIST

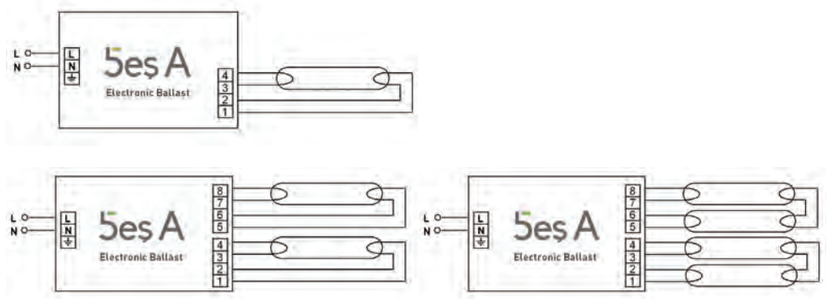
PRODUCT CODE	FLUORESCENT LAMP	POWER FACTOR*	RATED POWER (W) *	MAINS CURRENT(A) *	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EB-DF-T8/11518	1 x 15W-T8	0,91	15	0,075	42x264x34	0,205	25
EB-DF-T8/11518	1 x 18W-T8	0,91	16	0,080	42x264x34	0,205	25
EB-DF-T8/13036	1 x 30W-T8	0,97	30	0,145	42x264x34	0,205	25
EB-DF-T8/13036	1 x 36W-T8	0,97	32	0,150	42x264x34	0,205	25
EB-DF-T8/158	1 x 58W-T8	0,99	54	0,245	42x264x34	0,215	25
EB-DF-T8/21518	2x15W-T8	0,97	30	0,140	42x264x34	0,250	25
EB-DF-T8/21518	2 x 18W-T8	0,97	32	0,150	42x264x34	0,250	25
EB-DF-T8/23036	2 x 30W-T8	0,99	60	0,270	42x264x34	0,250	25
EB-DF-T8/23036	2 x 36W-T8	0,99	62	0,280	42x264x34	0,250	25
EB-DF-T8/258	2 x 58W-T8	0,99	89	0,405	42x264x34	0,255	25

PRODUCT LIST (Con't)

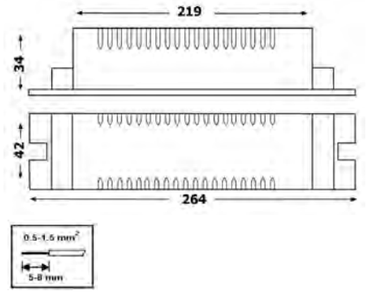
PRODUCT CODE	FLUORESCENT LAMP	POWER FACTOR*	RATED POWER(W)*	MAINS CURRENT (A)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EB-DF-T8/41518	4 x 15W-T8	0,99	63	0,285	42x264x34	0,255	25
EB-DF-T8/41518	4 x 18W-T8	0,99	67	0,305	42x264x34	0,255	25
EB-DF-T5/10608	1 x 6W-T5	0,87	11	0,055	42x264x34	0,205	25
EB-DF-T5/10608	1 x 8W-T5	0,92	15	0,075	42x264x34	0,205	25
EB-DF-T5/11314	1 x 14W-T5	0,95	21	0,095	42x264x34	0,205	25
EB-DF-T5/121	1 x 21W-T5	0,95	22	0,105	42x264x34	0,205	25
EB-DF-T5/124	1 x 24W-T5	0,95	23	0,110	42x264x34	0,205	25
EB-DF-T5/12835	1 x 28W-T5	0,97	29	0,135	42x264x34	0,205	25
EB-DF-T5/12835	1 x 35W-T5	0,97	33	0,150	42x264x34	0,205	25
EB-DF-T5/139	1 x 39W-T5	0,98	38	0,180	42x264x34	0,205	25
EB-DF-T5/149	1 x 49W-T5	0,98	51	0,230	42x264x34	0,210	25
EB-DF-T5/154	1 x 54W-T5	0,99	50	0,230	42x264x34	0,210	25
EB-DF-T5/180	1 x 80W-T5	0,99	70	0,320	42x264x34	0,210	25
EB-DF-T5/20608	2 x 6W-T5	0,94	22	0,105	42x264x34	0,245	25
EB-DF-T5/20608	2 x 8W-T5	0,97	30	0,140	42x264x34	0,245	25
EB-DF-T5/21314	2 x 13W-T5	0,98	41	0,190	42x264x34	0,245	25
EB-DF-T5/21314	2 x 14W-T5	0,98	42	0,200	42x264x34	0,245	25
EB-DF-T5/221	2 x 21W-T5	0,98	43	0,200	42x264x34	0,255	25
EB-DF-T5/224	2 x 24W-T5	0,99	47	0,210	42x264x34	0,255	25
EB-DF-T5/22835	2 x 28W-T5	0,99	56	0,255	42x264x34	0,255	25
EB-DF-T5/22835	2 x 35W-T5	0,99	65	0,300	42x264x34	0,255	25
EB-DF-T5/239	2 x 39W-T5	0,99	81	0,360	42x264x34	0,255	25
EB-DF-T5/249	2 x 49W-T5	0,99	102	0,450	42x264x34	0,255	25
EB-DF-T5/254	2 x 54W-T5	0,99	97	0,440	42x264x34	0,255	25
EB-DF-T5/280	2 x 80W-T5	0,99	120	0,550	42x264x34	0,255	25
EB-DF-T5/41314	4 x 13W-T5	0,99	55	0,250	42x264x34	0,255	25
EB-DF-T5/41314	4 x 14W-T5	0,99	57	0,260	42x264x34	0,255	25
EB-DF-PLL/111	1 x 11W-PLL	0,91	15	0,075	42x264x34	0,205	25
EB-DF-PLL/11824	1 x 18W-PLL	0,92	16	0,080	42x264x34	0,205	25
EB-DF-PLL/11824	1 x 24W-PLL	0,96	23	0,110	42x264x34	0,205	25
EB-DF-PLL/136	1 x 36W-PLL	0,98	37	0,170	42x264x34	0,205	25
EB-DF-PLL/155	1 x 55W-PLL	0,99	54	0,250	42x264x34	0,210	25
EB-DF-PLL/211	2 x 11W-PLL	0,97	30	0,140	42x264x34	0,245	25
EB-DF-PLL/218	2 x 18W-PLL	0,98	37	0,165	42x264x34	0,245	25
EB-DF-PLL/224	2 x 24W-PLL	0,98	46	0,205	42x264x34	0,245	25
EB-DF-PLL/236	2 x 36W-PLL	0,99	71	0,325	42x264x34	0,250	25
EB-DF-PLL/255	2 x 55W-PLL	0,99	92	0,415	42x264x34	0,250	25
EB-DF-PLC/113	1 x 13W-PLC	0,94	20	0,095	42x264x34	0,205	25
EB-DF-PLC/118	1 x 18W-PLC	0,95	22	0,105	42x264x34	0,205	25
EB-DF-PLC/126	1 x 26W-PLC	0,97	28	0,130	42x264x34	0,205	25
EB-DF-PLC/13242	1 x 32W-PLC	0,97	30	0,140	42x264x34	0,205	25
EB-DF-PLC/13242	1 x 42W-PLC	0,98	41	0,190	42x264x34	0,205	25
EB-DF-PLC/213	2 x 13W-PLC	0,98	40	0,185	42x264x34	0,245	25
EB-DF-PLC/218	2 x 18W-PLC	0,98	43	0,195	42x264x34	0,245	25
EB-DF-PLC/226	2 x 26W-PLC	0,99	54	0,250	42x264x34	0,245	25
EB-DF-PLC/23242	2 x 32W-PLC	0,99	59	0,270	42x264x34	0,250	25
EB-DF-PLC/23242	2 x 42W-PLC	0,99	75	0,340	42x264x34	0,250	25

* Measured under 230 V mains.

WIRING DIAGRAM



TECHNICAL DRAWING



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ELECTRONIC TRANSFORMER
(ETR-1250)

Silent and vibration-free lighting
Not heat as magnetic transformers
Wide voltage range
Low mains current
Open circuit and short circuit protection
Over load protection
Non-flammable ABS case
Non-flammable CEM1 PCB material
Fireproof silicone connecting cable
Operate 230 VAC / DC

CE RoHS HALOGEN

IP 20 | 230 VAC 50/60 Hz | V0 ABS | CEM1 PCB | SMD

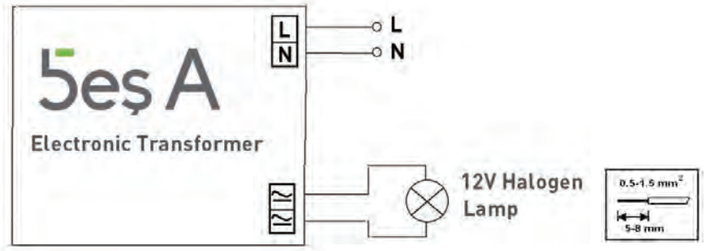
In accordance with EN 61347-1.

PRODUCT LIST

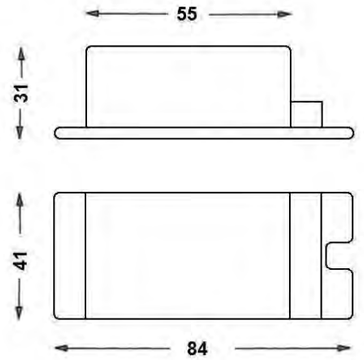
PRODUCT CODE	OUTPUT VOLTAGE (V)	OUTPUT POWER (W)*	RATED POWER (W)*	MAINS CURRENT (A)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
ETR-1250	12	20	16	0,080	29x155x30	0,075	50
ETR-1250	12	55	37	0,095	29x155x30	0,075	50

* Measured under 230 V mains.

WIRING DIAGRAM



TECHNICAL DRAWING



TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	MAX. OUTPUT POWER :	50 W
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	PROTECTION CLASS :	IP 20
MAX. CASE TEMPERATURE (tc) :	70 °C	INSULATION CLASS :	II
OUTPUT VOLTAGE :	12 VAC		

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STANDARDS & ICONS

STANDARDS & ICONS

EN 61347-1	General and safety requirements for lamp control gear
EN 61347-2-7	Lamp controlgear - Part 2-7: Particular requirements for battery supplied electronic control gear for emergency lighting (self-contained)
EN 61347-2-13	Particular requirements for d.c. or a.c. supplied electronic control gear for LED modules
EN 62031	Safety specifications for LED modules
EN 60598-1	General requirements and test for luminaires Part 1: General requirements and tests
EN 60598-2-22	Particular requirements in respect of luminaires for emergency lighting
EN 62384	DC or AC supplied electronic control gear for LED modules Performance requirements
EN 60929	AC and/or DC-supplied electronic control gear for tubular fluorescent lamps Performance requirements
EN 61347-2-3	Lamp control gear - Part 2-3: Particular requirements for a.c. and/or d.c. supplied electronic control gear for fluorescent lamps
EN 62471	Photobiological safety of lamps and lamp systems
EN 1838	Lighting applications - Emergency lighting
EN 50172	Emergency escape lighting systems
EN ISO 7010	Graphical symbols - Safety colours and safety signs - Registered safety signs
ISO 3864-1	Graphical symbols - Safety colours and safety signs –
ISO 16069	Graphical symbols - Safety signs - Safety way guidance systems (SWGS)
EN 55015	Limits and methods of measurement of radio disturbance characteristics of electrical ligthing and similar equipment
EN 61547	EMC immunity requirements

CE	Beş A products comply with the requirements of 2006/95/EC, 2006/95/EC, 2004/108/EC are entitled to bear the CE mark.
RoHS	RoHS (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment).
TÜVRheinland bsi. TSE	International and national approval marks.
	Protection class II device in which protection against electric shock is not based solely on the basic insulation but in which there are additional safety features such as double or enhanced insulation.
SELV	Safety Extra-Low-voltage
LED · LED SPOT · LED LAMP · HALOGEN TL5/4P · TL-D/4P · PL-L/4P · PL-T/C/4P	LED or lamp usage
EEI=A3 · EEI=A2	Energy efficiency index for elecronic ballast
230 VAC 50/60 Hz · 110 VAC 50/60 Hz · 24 V AC/DC	Mains voltage for the product
IP 20 · IP 44 · IP 00	Insulation class
V0 ABS · 41 ALU · N6 GBR · PVC	Body material of the product
CEM1 PCB · FR4 PCB	PCB material
SMD	SMD technology application
-|||- Ni - Cd · -|||- Lead-Acid	Battery type
EN 61347-2-7 · EN 61347-2-13 · EN 61347-2-3 · EN 60598-2-22	International standard code
%100 BLF · %85 BLF · 30% BLF · %15 BLF	Emergency (Ballast) lumen factor
OSRAM LED Technology included	OSRAM LED Technology included

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